



DOC0216USSEQ2.txt
SEQUENCE LISTING

<110> Rosanne M. Crooke
Mark J. Graham
Kristina Lemonidis Tarbet
Kenneth W. Dobie
Susan M. Freier

<120> ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

<130> DOC-0216US(ISIS.003CP1)

<140> US 10/712,795

<141> 2003-11-13

<150> US 60/426,234

<151> 2002-11-13

<150> PCT/US03/15493

<151> 2003-05-15

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gat ggg tct cta cgc cac aaa ttt cta gat tcg aat atc aaa ttc agt Asp Gly Ser Leu Arg His Lys Phe Leu Asp Ser Asn Ile Lys Phe Ser 1425 1430 1435			4442
cat gta gaa aaa ctt gga aac aac cca gtc tca aaa ggt tta cta ata His Val Glu Lys Leu Gly Asn Asn Pro Val Ser Lys Gly Leu Leu Ile 1440 1445 1450			4490
ttc gat gca tct agt tcc tgg gga cca cag atg tct gct tca gtt cat Phe Asp Ala Ser Ser Ser Trp Gly Pro Gln Met Ser Ala Ser Val His 1455 1460 1465 1470			4538
ttg gac tcc aaa aag aaa cag cat ttg ttt gtc aaa gaa gtc aag att Leu Asp Ser Lys Lys Lys Gln His Leu Phe Val Lys Glu Val Lys Ile 1475 1480 1485			4586
gat ggg cag ttc aga gtc tct tcg ttc tat gct aaa ggc aca tat ggc Asp Gly Gln Phe Arg Val Ser Ser Phe Tyr Ala Lys Gly Thr Tyr Gly 1490 1495 1500			4634
ctg tct tgt cag agg gat cct aac act ggc cgg ctc aat gga gag tcc Leu Ser Cys Gln Arg Asp Pro Asn Thr Gly Arg Leu Asn Gly Glu Ser 1505 1510 1515			4682
aac ctg agg ttt aac tcc tcc tac ctc caa ggc acc aac cag ata aca Asn Leu Arg Phe Asn Ser Ser Tyr Leu Gln Gly Thr Asn Gln Ile Thr 1520 1525 1530			4730
gga aga tat gaa gat gga acc ctc tcc ctc acc tcc acc tct gat ctg Gly Arg Tyr Glu Asp Gly Thr Leu Ser Leu Thr Ser Thr Ser Asp Leu 1535 1540 1545 1550			4778
caa agt ggc atc att aaa aat act gct tcc cta aag tat gag aac tac Gln Ser Gly Ile Ile Lys Asn Thr Ala Ser Leu Lys Tyr Glu Asn Tyr 1555 1560 1565			4826
gag ctg act tta aaa tct gac acc aat ggg aag tat aag aac ttt gcc Glu Leu Thr Leu Lys Ser Asp Thr Asn Gly Lys Tyr Lys Asn Phe Ala 1570 1575 1580			4874
act tct aac aag atg gat atg acc ttc tct aag caa aat gca ctg ctg Thr Ser Asn Lys Met Asp Met Thr Phe Ser Lys Gln Asn Ala Leu Leu 1585 1590 1595			4922
cgt tct gaa tat cag gct gat tac gag tca ttg agg ttc ttc agc ctg Arg Ser Glu Tyr Gln Ala Asp Tyr Glu Ser Leu Arg Phe Phe Ser Leu 1600 1605 1610			4970

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ctt tct gga tca cta aat tcc cat ggt ctt gag tta aat gct gac atc Leu Ser Gly Ser Leu Asn Ser His Gly Leu Glu Leu Asn Ala Asp Ile 1615 1620 1625 1630	5018
tta ggc act gac aaa att aat agt ggt gct cac aag gcg aca cta agg Leu Gly Thr Asp Lys Ile Asn Ser Gly Ala His Lys Ala Thr Leu Arg 1635 1640 1645	5066
att ggc caa gat gga ata tct acc agt gca acg acc aac ttg aag tgt Ile Gly Gln Asp Gly Ile Ser Thr Ser Ala Thr Thr Asn Leu Lys Cys 1650 1655 1660	5114
agt ctc ctg gtg ctg gag aat gag ctg aat gca gag ctt ggc ctc tct Ser Leu Leu Val Leu Glu Asn Glu Leu Asn Ala Glu Leu Gly Leu Ser 1665 1670 1675	5162
ggg gca tct atg aaa tta aca aca aat ggc cgc ttc agg gaa cac aat Gly Ala Ser Met Lys Leu Thr Thr Asn Gly Arg Phe Arg Glu His Asn 1680 1685 1690	5210
gca aaa ttc agt ctg gat ggg aaa gcc gcc ctc aca gag cta tca ctg Ala Lys Phe Ser Leu Asp Gly Lys Ala Ala Leu Thr Glu Leu Ser Leu 1695 1700 1705 1710	5258
gga agt gct tat cag gcc atg att ctg ggt gtc gac agc aaa aac att Gly Ser Ala Tyr Gln Ala Met Ile Leu Gly Val Asp Ser Lys Asn Ile 1715 1720 1725	5306
ttc aac ttc aag gtc agt caa gaa gga ctt aag ctc tca aat gac atg Phe Asn Phe Lys Val Ser Gln Glu Gly Leu Lys Leu Ser Asn Asp Met 1730 1735 1740	5354
atg ggc tca tat gct gaa atg aaa ttt gac cac aca aac agt ctg aac Met Gly Ser Tyr Ala Glu Met Lys Phe Asp His Thr Asn Ser Leu Asn 1745 1750 1755	5402
att gca ggc tta tca ctg gac ttc tct tca aaa ctt gac aac att tac Ile Ala Gly Leu Ser Leu Asp Phe Ser Ser Lys Leu Asp Asn Ile Tyr 1760 1765 1770	5450
agc tct gac aag ttt tat aag caa act gtt aat tta cag cta cag ccc Ser Ser Asp Lys Phe Tyr Lys Gln Thr Val Asn Leu Gln Leu Gln Pro 1775 1780 1785 1790	5498
tat tct ctg gta act act tta aac agt gac ctg aaa tac aat gct ctg Tyr Ser Leu Val Thr Thr Leu Asn Ser Asp Leu Lys Tyr Asn Ala Leu 1795 1800 1805	5546
gat ctc acc aac aat ggg aaa cta cgg cta gaa ccc ctg aag ctg cat Asp Leu Thr Asn Asn Gly Lys Leu Arg Leu Glu Pro Leu Lys Leu His 1810 1815 1820	5594
gtg gct ggt aac cta aaa gga gcc tac caa aat aat gaa ata aaa cac Val Ala Gly Asn Leu Lys Gly Ala Tyr Gln Asn Asn Glu Ile Lys His 1825 1830 1835	5642
atc tat gcc atc tct tct gct gcc tta tca gca agc tat aaa gca gac Ile Tyr Ala Ile Ser Ser Ala Ala Leu Ser Ala Ser Tyr Lys Ala Asp 1840 1845 1850	5690
act gtt gct aag gtt cag ggt gtg gag ttt agc cat cgg ctc aac aca Thr Val Ala Lys Val Gln Gly Val Glu Phe Ser His Arg Leu Asn Thr 1855 1860 1865 1870	5738
gac atc gct ggg ctg gct tca gcc att gac atg agc aca aac tat aat	5786

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Asp	Ile	Ala	Gly	Leu	Ala	Ser	Ala	Ile	Asp	Met	Ser	Thr	Asn	Tyr	Asn	
				1875					1880					1885		
tca	gac	tca	ctg	cat	ttc	agc	aat	gtc	ttc	cgt	tct	gta	atg	gcc	ccg	5834
Ser	Asp	Ser	Leu	His	Phe	Ser	Asn	Val	Phe	Arg	Ser	Val	Met	Ala	Pro	
			1890					1895					1900			
ttt	acc	atg	acc	atc	gat	gca	cat	aca	aat	ggc	aat	ggg	aaa	ctc	gct	5882
Phe	Thr	Met	Thr	Ile	Asp	Ala	His	Thr	Asn	Gly	Asn	Gly	Lys	Leu	Ala	
		1905					1910					1915				
ctc	tgg	gga	gaa	cat	act	ggg	cag	ctg	tat	agc	aaa	ttc	ctg	ttg	aaa	5930
Leu	Trp	Gly	Glu	His	Thr	Gly	Gln	Leu	Tyr	Ser	Lys	Phe	Leu	Leu	Lys	
	1920					1925					1930					
gca	gaa	cct	ctg	gca	ttt	act	ttc	tct	cat	gat	tac	aaa	ggc	tcc	aca	5978
Ala	Glu	Pro	Leu	Ala	Phe	Thr	Phe	Ser	His	Asp	Tyr	Lys	Gly	Ser	Thr	
1935					1940					1945					1950	
agt	cat	cat	ctc	gtg	tct	agg	aaa	agc	atc	agt	gca	gct	ctt	gaa	cac	6026
Ser	His	His	Leu	Val	Ser	Arg	Lys	Ser	Ile	Ser	Ala	Ala	Leu	Glu	His	
				1955					1960					1965		
aaa	gtc	agt	gcc	ctg	ctt	act	cca	gct	gag	cag	aca	ggc	acc	tgg	aaa	6074
Lys	Val	Ser	Ala	Leu	Leu	Thr	Pro	Ala	Glu	Gln	Thr	Gly	Thr	Trp	Lys	
			1970					1975					1980			
ctc	aag	acc	caa	ttt	aac	aac	aat	gaa	tac	agc	cag	gac	ttg	gat	gct	6122
Leu	Lys	Thr	Gln	Phe	Asn	Asn	Asn	Glu	Tyr	Ser	Gln	Asp	Leu	Asp	Ala	
		1985					1990					1995				
tac	aac	act	aaa	gat	aaa	att	ggc	gtg	gag	ctt	act	gga	cga	act	ctg	6170
Tyr	Asn	Thr	Lys	Asp	Lys	Ile	Gly	Val	Glu	Leu	Thr	Gly	Arg	Thr	Leu	
	2000					2005					2010					
gct	gac	cta	act	cta	cta	gac	tcc	cca	att	aaa	gtg	cca	ctt	tta	ctc	6218
Ala	Asp	Leu	Thr	Leu	Leu	Asp	Ser	Pro	Ile	Lys	Val	Pro	Leu	Leu	Leu	
2015				2020						2025					2030	
agt	gag	ccc	atc	aat	atc	att	gat	gct	tta	gag	atg	aga	gat	gcc	ggt	6266
Ser	Glu	Pro	Ile	Asn	Ile	Ile	Asp	Ala	Leu	Glu	Met	Arg	Asp	Ala	Val	
			2035					2040						2045		
gag	aag	ccc	caa	gaa	ttt	aca	att	gtt	gct	ttt	gta	aag	tat	gat	aaa	6314
Glu	Lys	Pro	Gln	Glu	Phe	Thr	Ile	Val	Ala	Phe	Val	Lys	Tyr	Asp	Lys	
			2050					2055					2060			
aac	caa	gat	gtt	cac	tcc	att	aac	ctc	cca	ttt	ttt	gag	acc	ttg	caa	6362
Asn	Gln	Asp	Val	His	Ser	Ile	Asn	Leu	Pro	Phe	Phe	Glu	Thr	Leu	Gln	
		2065					2070					2075				
gaa	tat	ttt	gag	agg	aat	cga	caa	acc	att	ata	gtt	gta	gtg	gaa	aac	6410
Glu	Tyr	Phe	Glu	Arg	Asn	Arg	Gln	Thr	Ile	Ile	Val	Val	Val	Glu	Asn	
	2080				2085						2090					
gta	cag	aga	aac	ctg	aag	cac	atc	aat	att	gat	caa	ttt	gta	aga	aaa	6458
Val	Gln	Arg	Asn	Leu	Lys	His	Ile	Asn	Ile	Asp	Gln	Phe	Val	Arg	Lys	
2095				2100						2105					2110	
tac	aga	gca	gcc	ctg	gga	aaa	ctc	cca	cag	caa	gct	aat	gat	tat	ctg	6506
Tyr	Arg	Ala	Ala	Leu	Gly	Lys	Leu	Pro	Gln	Gln	Ala	Asn	Asp	Tyr	Leu	
				2115					2120					2125		
aat	tca	ttc	aat	tgg	gag	aga	caa	gtt	tca	cat	gcc	aag	gag	aaa	ctg	6554
Asn	Ser	Phe	Asn	Trp	Glu	Arg	Gln	Val	Ser	His	Ala	Lys	Glu	Lys	Leu	
			2130					2135					2140			

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act gct ctc aca aaa aag tat aga att aca gaa aat gat ata caa att	6602
Thr Ala Leu Thr Lys Lys Tyr Arg Ile Thr Glu Asn Asp Ile Gln Ile	
2145 2150 2155	
gca tta gat gat gcc aaa atc aac ttt aat gaa aaa cta tct caa ctg	6650
Ala Leu Asp Asp Ala Lys Ile Asn Phe Asn Glu Lys Leu Ser Gln Leu	
2160 2165 2170	
cag aca tat atg ata caa ttt gat cag tat att aaa gat agt tat gat	6698
Gln Thr Tyr Met Ile Gln Phe Asp Gln Tyr Ile Lys Asp Ser Tyr Asp	
2175 2180 2185 2190	
tta cat gat ttg aaa ata gct att gct aat att att gat gaa atc att	6746
Leu His Asp Leu Lys Ile Ala Ile Ala Asn Ile Ile Asp Glu Ile Ile	
2195 2200 2205	
gaa aaa tta aaa agt ctt gat gag cac tat cat atc cgt gta aat tta	6794
Glu Lys Leu Lys Ser Leu Asp Glu His Tyr His Ile Arg Val Asn Leu	
2210 2215 2220	
gta aaa aca atc cat gat cta cat ttg ttt att gaa aat att gat ttt	6842
Val Lys Thr Ile His Asp Leu His Leu Phe Ile Glu Asn Ile Asp Phe	
2225 2230 2235	
aac aaa agt gga agt agt act gca tcc tgg att caa aat gtg gat act	6890
Asn Lys Ser Gly Ser Ser Thr Ala Ser Trp Ile Gln Asn Val Asp Thr	
2240 2245 2250	
aag tac caa atc aga atc cag ata caa gaa aaa ctg cag cag ctt aag	6938
Lys Tyr Gln Ile Arg Ile Gln Ile Gln Glu Lys Leu Gln Gln Leu Lys	
2255 2260 2265 2270	
aga cac ata cag aat ata gac atc cag cac cta gct gga aag tta aaa	6986
Arg His Ile Gln Asn Ile Asp Ile Gln His Leu Ala Gly Lys Leu Lys	
2275 2280 2285	
caa cac att gag gct att gat gtt aga gtg ctt tta gat caa ttg gga	7034
Gln His Ile Glu Ala Ile Asp Val Arg Val Leu Leu Asp Gln Leu Gly	
2290 2295 2300	
act aca att tca ttt gaa aga ata aat gat gtt ctt gag cat gtc aaa	7082
Thr Thr Ile Ser Phe Glu Arg Ile Asn Asp Val Leu Glu His Val Lys	
2305 2310 2315	
cac ttt gtt ata aat ctt att ggg gat ttt gaa gta gct gag aaa atc	7130
His Phe Val Ile Asn Leu Ile Gly Asp Phe Glu Val Ala Glu Lys Ile	
2320 2325 2330	
aat gcc ttc aga gcc aaa gtc cat gag tta atc gag agg tat gaa gta	7178
Asn Ala Phe Arg Ala Lys Val His Glu Leu Ile Glu Arg Tyr Glu Val	
2335 2340 2345 2350	
gac caa caa atc cag gtt tta atg gat aaa tta gta gag ttg acc cac	7226
Asp Gln Gln Ile Gln Val Leu Met Asp Lys Leu Val Glu Leu Thr His	
2355 2360 2365	
caa tac aag ttg aag gag act att cag aag cta agc aat gtc cta caa	7274
Gln Tyr Lys Leu Lys Glu Thr Ile Gln Lys Leu Ser Asn Val Leu Gln	
2370 2375 2380	
caa gtt aag ata aaa gat tac ttt gag aaa ttg gtt gga ttt att gat	7322
Gln Val Lys Ile Lys Asp Tyr Phe Glu Lys Leu Val Gly Phe Ile Asp	
2385 2390 2395	
gat gct gtg aag aag ctt aat gaa tta tct ttt aaa aca ttc att gaa	7370

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Asp	Ala	Val	Lys	Lys	Leu	Asn	Glu	Leu	Ser	Phe	Lys	Thr	Phe	Ile	Glu	
2400						2405					2410					
gat	gtt	aac	aaa	ttc	ctt	gac	atg	ttg	ata	aag	aaa	tta	aag	tca	ttt	7418
Asp	Val	Asn	Lys	Phe	Leu	Asp	Met	Leu	Ile	Lys	Lys	Leu	Lys	Ser	Phe	
2415					2420					2425					2430	
gat	tac	cac	cag	ttt	gta	gat	gaa	acc	aat	gac	aaa	atc	cgt	gag	gtg	7466
Asp	Tyr	His	Gln	Phe	Val	Asp	Glu	Thr	Asn	Asp	Lys	Ile	Arg	Glu	Val	
				2435					2440					2445		
act	cag	aga	ctc	aat	ggg	gaa	att	cag	gct	ctg	gaa	cta	cca	caa	aaa	7514
Thr	Gln	Arg	Leu	Asn	Gly	Glu	Ile	Gln	Ala	Leu	Glu	Leu	Pro	Gln	Lys	
			2450					2455					2460			
gct	gaa	gca	tta	aaa	ctg	ttt	tta	gag	gaa	acc	aag	gcc	aca	ggt	gca	7562
Ala	Glu	Ala	Leu	Lys	Leu	Phe	Leu	Glu	Glu	Thr	Lys	Ala	Thr	Val	Ala	
		2465					2470					2475				
gtg	tat	ctg	gaa	agc	cta	cag	gac	acc	aaa	ata	acc	tta	atc	atc	aat	7610
Val	Tyr	Leu	Glu	Ser	Leu	Gln	Asp	Thr	Lys	Ile	Thr	Leu	Ile	Ile	Asn	
	2480					2485					2490					
tgg	tta	cag	gag	gct	tta	agt	tca	gca	tct	ttg	gct	cac	atg	aag	gcc	7658
Trp	Leu	Gln	Glu	Ala	Leu	Ser	Ser	Ala	Ser	Leu	Ala	His	Met	Lys	Ala	
2495					2500					2505					2510	
aaa	ttc	cga	gag	act	cta	gaa	gat	aca	cga	gac	cga	atg	tat	caa	atg	7706
Lys	Phe	Arg	Glu	Thr	Leu	Glu	Asp	Thr	Arg	Asp	Arg	Met	Tyr	Gln	Met	
				2515					2520					2525		
gac	att	cag	cag	gaa	ctt	caa	cga	tac	ctg	tct	ctg	gta	ggc	cag	gtt	7754
Asp	Ile	Gln	Gln	Glu	Leu	Gln	Arg	Tyr	Leu	Ser	Leu	Val	Gly	Gln	Val	
			2530					2535					2540			
tat	agc	aca	ctt	gtc	acc	tac	att	tct	gat	tgg	tgg	act	ctt	gct	gct	7802
Tyr	Ser	Thr	Leu	Val	Thr	Tyr	Ile	Ser	Asp	Trp	Trp	Thr	Leu	Ala	Ala	
		2545					2550					2555				
aag	aac	ctt	act	gac	ttt	gca	gag	caa	tat	tct	atc	caa	gat	tgg	gct	7850
Lys	Asn	Leu	Thr	Asp	Phe	Ala	Glu	Gln	Tyr	Ser	Ile	Gln	Asp	Trp	Ala	
	2560				2565						2570					
aaa	cgt	atg	aaa	gca	ttg	gta	gag	caa	ggg	ttc	act	gtt	cct	gaa	atc	7898
Lys	Arg	Met	Lys	Ala	Leu	Val	Glu	Gln	Gly	Phe	Thr	Val	Pro	Glu	Ile	
2575					2580				2585						2590	
aag	acc	atc	ctt	ggg	acc	atg	cct	gcc	ttt	gaa	gtc	agt	ctt	cag	gct	7946
Lys	Thr	Ile	Leu	Gly	Thr	Met	Pro	Ala	Phe	Glu	Val	Ser	Leu	Gln	Ala	
				2595				2600						2605		
ctt	cag	aaa	gct	acc	ttc	cag	aca	cct	gat	ttt	ata	gtc	ccc	cta	aca	7994
Leu	Gln	Lys	Ala	Thr	Phe	Gln	Thr	Pro	Asp	Phe	Ile	Val	Pro	Leu	Thr	
			2610					2615					2620			
gat	ttg	agg	att	cca	tca	gtt	cag	ata	aac	ttc	aaa	gac	tta	aaa	aat	8042
Asp	Leu	Arg	Ile	Pro	Ser	Val	Gln	Ile	Asn	Phe	Lys	Asp	Leu	Lys	Asn	
		2625					2630					2635				
ata	aaa	atc	cca	tcc	agg	ttt	tcc	aca	cca	gaa	ttt	acc	atc	ctt	aac	8090
Ile	Lys	Ile	Pro	Ser	Arg	Phe	Ser	Thr	Pro	Glu	Phe	Thr	Ile	Leu	Asn	
	2640					2645					2650					
acc	ttc	cac	att	cct	tcc	ttt	aca	att	gac	ttt	gtc	gaa	atg	aaa	gta	8138
Thr	Phe	His	Ile	Pro	Ser	Phe	Thr	Ile	Asp	Phe	Val	Glu	Met	Lys	Val	
2655					2660					2665					2670	

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aag atc atc aga acc att gac cag atg cag aac agt gag ctg cag tgg	8186
Lys Ile Ile Arg Thr Ile Asp Gln Met Gln Asn Ser Glu Leu Gln Trp	
2675 2680 2685	
ccc gtt cca gat ata tat ctc agg gat ctg aag gtg gag gac att cct	8234
Pro Val Pro Asp Ile Tyr Leu Arg Asp Leu Lys Val Glu Asp Ile Pro	
2690 2695 2700	
cta gcg aga atc acc ctg cca gac ttc cgt tta cca gaa atc gca att	8282
Leu Ala Arg Ile Thr Leu Pro Asp Phe Arg Leu Pro Glu Ile Ala Ile	
2705 2710 2715	
cca gaa ttc ata atc cca act ctc aac ctt aat gat ttt caa gtt cct	8330
Pro Glu Phe Ile Ile Pro Thr Leu Asn Leu Asn Asp Phe Gln Val Pro	
2720 2725 2730	
gac ctt cac ata cca gaa ttc cag ctt ccc cac atc tca cac aca att	8378
Asp Leu His Ile Pro Glu Phe Gln Leu Pro His Ile Ser His Thr Ile	
2735 2740 2745 2750	
gaa gta cct act ttt ggc aag cta tac agt att ctg aaa atc caa tct	8426
Glu Val Pro Thr Phe Gly Lys Leu Tyr Ser Ile Leu Lys Ile Gln Ser	
2755 2760 2765	
cct ctt ttc aca tta gat gca aat gct gac ata ggg aat gga acc acc	8474
Pro Leu Phe Thr Leu Asp Ala Asn Ala Asp Ile Gly Asn Gly Thr Thr	
2770 2775 2780	
tca gca aac gaa gca ggt atc gca gct tcc atc act gcc aaa gga gag	8522
Ser Ala Asn Glu Ala Gly Ile Ala Ala Ser Ile Thr Ala Lys Gly Glu	
2785 2790 2795	
tcc aaa tta gaa gtt ctc aat ttt gat ttt caa gca aat gca caa ctc	8570
Ser Lys Leu Glu Val Leu Asn Phe Asp Phe Gln Ala Asn Ala Gln Leu	
2800 2805 2810	
tca aac cct aag att aat ccg ctg gct ctg aag gag tca gtg aag ttc	8618
Ser Asn Pro Lys Ile Asn Pro Leu Ala Leu Lys Glu Ser Val Lys Phe	
2815 2820 2825 2830	
tcc agc aag tac ctg aga acg gag cat ggg agt gaa atg ctg ttt ttt	8666
Ser Ser Lys Tyr Leu Arg Thr Glu His Gly Ser Glu Met Leu Phe Phe	
2835 2840 2845	
gga aat gct att gag gga aaa tca aac aca gtg gca agt tta cac aca	8714
Gly Asn Ala Ile Glu Gly Lys Ser Asn Thr Val Ala Ser Leu His Thr	
2850 2855 2860	
gaa aaa aat aca ctg gag ctt agt aat gga gtg att gtc aag ata aac	8762
Glu Lys Asn Thr Leu Glu Leu Ser Asn Gly Val Ile Val Lys Ile Asn	
2865 2870 2875	
aat cag ctt acc ctg gat agc aac act aaa tac ttc cac aaa ttg aac	8810
Asn Gln Leu Thr Leu Asp Ser Asn Thr Lys Tyr Phe His Lys Leu Asn	
2880 2885 2890	
atc ccc aaa ctg gac ttc tct agt cag gct gac ctg cgc aac gag atc	8858
Ile Pro Lys Leu Asp Phe Ser Ser Gln Ala Asp Leu Arg Asn Glu Ile	
2895 2900 2905 2910	
aag aca ctg ttg aaa gct ggc cac ata gca tgg act tct tct gga aaa	8906
Lys Thr Leu Leu Lys Ala Gly His Ile Ala Trp Thr Ser Ser Gly Lys	
2915 2920 2925	
ggg tca tgg aaa tgg gcc tgc ccc aga ttc tca gat gag gga aca cat	8954

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Gly	Ser	Trp	Lys	Trp	Ala	Cys	Pro	Arg	Phe	Ser	Asp	Glu	Gly	Thr	His	
			2930					2935					2940			
gaa	tca	caa	att	agt	ttc	acc	ata	gaa	gga	ccc	ctc	act	tcc	ttt	gga	9002
Glu	Ser	Gln	Ile	Ser	Phe	Thr	Ile	Glu	Gly	Pro	Leu	Thr	Ser	Phe	Gly	
		2945					2950					2955				
ctg	tcc	aat	aag	atc	aat	agc	aaa	cac	cta	aga	gta	aac	caa	aac	ttg	9050
Leu	Ser	Asn	Lys	Ile	Asn	Ser	Lys	His	Leu	Arg	Val	Asn	Gln	Asn	Leu	
		2960				2965					2970					
gtt	tat	gaa	tct	ggc	tcc	ctc	aac	ttt	tct	aaa	ctt	gaa	att	caa	tca	9098
Val	Tyr	Glu	Ser	Gly	Ser	Leu	Asn	Phe	Ser	Lys	Leu	Glu	Ile	Gln	Ser	
2975					2980					2985					2990	
caa	gtc	gat	tcc	cag	cat	gtg	ggc	cac	agt	gtt	cta	act	gct	aaa	ggc	9146
Gln	Val	Asp	Ser	Gln	His	Val	Gly	His	Ser	Val	Leu	Thr	Ala	Lys	Gly	
				2995					3000					3005		
atg	gca	ctg	ttt	gga	gaa	ggg	aag	gca	gag	ttt	act	ggg	agg	cat	gat	9194
Met	Ala	Leu	Phe	Gly	Glu	Gly	Lys	Ala	Glu	Phe	Thr	Gly	Arg	His	Asp	
			3010					3015					3020			
gct	cat	tta	aat	gga	aag	gtt	att	gga	act	ttg	aaa	aat	tct	ctt	ttc	9242
Ala	His	Leu	Asn	Gly	Lys	Val	Ile	Gly	Thr	Leu	Lys	Asn	Ser	Leu	Phe	
		3025					3030					3035				
ttt	tca	gcc	cag	cca	ttt	gag	atc	acg	gca	tcc	aca	aac	aat	gaa	ggg	9290
Phe	Ser	Ala	Gln	Pro	Phe	Glu	Ile	Thr	Ala	Ser	Thr	Asn	Asn	Glu	Gly	
	3040					3045					3050					
aat	ttg	aaa	gtt	cgt	ttt	cca	tta	agg	tta	aca	ggg	aag	ata	gac	ttc	9338
Asn	Leu	Lys	Val	Arg	Phe	Pro	Leu	Arg	Leu	Thr	Gly	Lys	Ile	Asp	Phe	
3055					3060					3065					3070	
ctg	aat	aac	tat	gca	ctg	ttt	ctg	agt	ccc	agt	gcc	cag	caa	gca	agt	9386
Leu	Asn	Asn	Tyr	Ala	Leu	Phe	Leu	Ser	Pro	Ser	Ala	Gln	Gln	Ala	Ser	
				3075					3080					3085		
tgg	caa	gta	agt	gct	agg	ttc	aat	cag	tat	aag	tac	aac	caa	aat	ttc	9434
Trp	Gln	Val	Ser	Ala	Arg	Phe	Asn	Gln	Tyr	Lys	Tyr	Asn	Gln	Asn	Phe	
			3090					3095					3100			
tct	gct	gga	aac	aac	gag	aac	att	atg	gag	gcc	cat	gta	gga	ata	aat	9482
Ser	Ala	Gly	Asn	Asn	Glu	Asn	Ile	Met	Glu	Ala	His	Val	Gly	Ile	Asn	
		3105					3110					3115				
gga	gaa	gca	aat	ctg	gat	ttc	tta	aac	att	cct	tta	aca	att	cct	gaa	9530
Gly	Glu	Ala	Asn	Leu	Asp	Phe	Leu	Asn	Ile	Pro	Leu	Thr	Ile	Pro	Glu	
	3120					3125					3130					
atg	cgt	cta	cct	tac	aca	ata	atc	aca	act	cct	cca	ctg	aaa	gat	ttc	9578
Met	Arg	Leu	Pro	Tyr	Thr	Ile	Ile	Thr	Thr	Pro	Pro	Leu	Lys	Asp	Phe	
3135					3140					3145					3150	
tct	cta	tgg	gaa	aaa	aca	ggc	ttg	aag	gaa	ttc	ttg	aaa	acg	aca	aag	9626
Ser	Leu	Trp	Glu	Lys	Thr	Gly	Leu	Lys	Glu	Phe	Leu	Lys	Thr	Thr	Lys	
				3155					3160					3165		
caa	tca	ttt	gat	tta	agt	gta	aaa	gct	cag	tat	aag	aaa	aac	aaa	cac	9674
Gln	Ser	Phe	Asp	Leu	Ser	Val	Lys	Ala	Gln	Tyr	Lys	Lys	Asn	Lys	His	
			3170					3175					3180			
agg	cat	tcc	atc	aca	aat	cct	ttg	gct	gtg	ctt	tgt	gag	ttt	atc	agt	9722
Arg	His	Ser	Ile	Thr	Asn	Pro	Leu	Ala	Val	Leu	Cys	Glu	Phe	Ile	Ser	
		3185					3190					3195				

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cag Gln 3200	agc Ser 3200	atc Ile 3200	aaa Lys 3200	tcc Ser 3200	ttt Phe 3205	gac Asp 3205	agg Arg 3205	cat His 3205	ttt Phe 3210	gaa Glu 3210	aaa Lys 3210	aac Asn 3210	aga Arg 3210	aac Asn 3210	aat Asn 3210	9770
gca Ala 3215	tta Leu 3215	gat Asp 3215	ttt Phe 3215	gtc Val 3220	acc Thr 3220	aaa Lys 3220	tcc Ser 3220	tat Tyr 3220	aat Asn 3225	gaa Glu 3225	aca Thr 3225	aaa Lys 3225	att Ile 3225	aag Lys 3230	ttt Phe 3230	9818
gat Asp 3235	aag Lys 3235	tac Tyr 3235	aaa Lys 3235	gct Ala 3235	gaa Glu 3235	aaa Lys 3235	tct Ser 3235	cac His 3240	gac Asp 3240	gag Glu 3240	ctc Leu 3240	ccc Pro 3245	agg Arg 3245	acc Thr 3245	ttt Phe 3245	9866
caa Gln 3250	att Ile 3250	cct Pro 3250	gga Gly 3250	tac Tyr 3250	act Thr 3250	gtt Val 3255	cca Pro 3255	gtt Val 3255	gtc Val 3255	aat Asn 3255	gtt Val 3260	gaa Glu 3260	gtg Val 3260	tct Ser 3260	cca Pro 3260	9914
ttc Phe 3265	acc Thr 3265	ata Ile 3265	gag Glu 3265	atg Met 3265	tcg Ser 3270	gca Ala 3270	ttc Phe 3270	ggc Gly 3270	tat Tyr 3270	gtg Val 3275	ttc Phe 3275	cca Pro 3275	aaa Lys 3275	gca Ala 3275	gtc Val 3275	9962
agc Ser 3280	atg Met 3280	cct Pro 3280	agt Ser 3285	ttc Phe 3285	tcc Ser 3285	atc Ile 3285	cta Leu 3285	ggg Gly 3285	tct Ser 3290	gac Asp 3290	gtc Val 3290	cgt Arg 3290	gtg Val 3290	cct Pro 3290	tca Ser 3290	10010
tac Tyr 3295	aca Thr 3295	tta Leu 3295	atc Ile 3300	ctg Leu 3300	cca Pro 3300	tca Ser 3300	tta Leu 3305	gag Glu 3305	ctg Leu 3305	cca Pro 3305	gtc Val 3305	ctt Leu 3310	cat His 3310	gtc Val 3310	cct Pro 3310	10058
aga Arg 3315	aat Asn 3315	ctc Leu 3315	aag Lys 3315	ctt Leu 3315	tct Ser 3315	ctt Leu 3315	cca Pro 3320	cat His 3320	ttc Phe 3320	aag Lys 3320	gaa Glu 3320	ttg Leu 3325	tgt Cys 3325	acc Thr 3325	ata Ile 3325	10106
agc Ser 3330	cat His 3330	att Ile 3330	ttt Phe 3330	att Ile 3330	cct Pro 3330	gcc Ala 3335	atg Met 3335	ggc Gly 3335	aat Asn 3335	att Ile 3335	acc Thr 3340	tat Tyr 3340	gat Asp 3340	ttc Phe 3340	tcc Ser 3340	10154
ttt Phe 3345	aaa Lys 3345	tca Ser 3345	agt Ser 3345	gtc Val 3350	atc Ile 3350	aca Thr 3350	ctg Leu 3350	aat Asn 3350	acc Thr 3350	aat Asn 3355	gct Ala 3355	gaa Glu 3355	ctt Leu 3355	ttt Phe 3355	aac Asn 3355	10202
cag Gln 3360	tca Ser 3360	gat Asp 3360	att Ile 3365	gtt Val 3365	gct Ala 3365	cat His 3365	ctc Leu 3365	ctt Leu 3370	tct Ser 3370	tca Ser 3370	tct Ser 3370	tca Ser 3370	tct Ser 3370	gtc Val 3370	att Ile 3370	10250
gat Asp 3375	gca Ala 3375	ctg Leu 3375	cag Gln 3380	tac Tyr 3380	aaa Lys 3380	tta Leu 3380	gag Glu 3385	ggc Gly 3385	acc Thr 3385	aca Thr 3385	aga Arg 3385	ttg Leu 3390	aca Thr 3390	aga Arg 3390	aaa Lys 3390	10298
agg Arg 3395	gga Gly 3395	ttg Leu 3395	aag Lys 3395	tta Leu 3395	gcc Ala 3395	aca Thr 3400	gct Ala 3400	ctg Leu 3400	tct Ser 3400	ctg Leu 3400	agc Ser 3405	aac Asn 3405	aaa Lys 3405	ttt Phe 3405	gtg Val 3405	10346
gag Glu 3410	ggg Gly 3410	agt Ser 3410	cat His 3410	aac Asn 3410	agt Ser 3415	act Thr 3415	gtg Val 3415	agc Ser 3415	tta Leu 3415	acc Thr 3420	acg Thr 3420	aaa Lys 3420	aat Asn 3420	atg Met 3420	gaa Glu 3420	10394
gtg Val 3425	tca Ser 3425	gtg Val 3425	gca Ala 3425	aaa Lys 3430	acc Thr 3430	aca Thr 3430	aaa Lys 3430	gcc Ala 3430	gaa Glu 3430	att Ile 3435	cca Pro 3435	att Ile 3435	ttg Leu 3435	aga Arg 3435	atg Met 3435	10442
aat Asn 3440	ttc Phe 3440	aag Lys 3440	caa Gln 3445	gaa Glu 3445	ctt Leu 3445	aat Asn 3445	gga Gly 3445	aat Asn 3450	acc Thr 3450	aag Lys 3450	tca Ser 3450	aaa Lys 3450	cct Pro 3450	act Thr 3450	gtc Val 3450	10490
tct 3450	tcc 3450	tcc 3450	atg 3450	gaa 3450	ttt 3450	aag 3450	tat 3450	gat 3450	ttc 3450	aat 3450	tct 3450	tca 3450	atg 3450	ctg 3450	tac 3450	10538

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Ser 3455	Ser	Ser	Met	Glu	Phe 3460	Lys	Tyr	Asp	Phe 3465	Asn	Ser	Ser	Met	Leu	Tyr 3470	
tct Ser	acc Thr	gct Ala	aaa Lys	gga Gly 3475	gca Ala	gtt Val	gac Asp	cac His	aag Lys 3480	ctt Leu	agc Ser	ttg Leu	gaa Glu	agc Ser 3485	ctc Leu	10586
acc Thr	tct Ser	tac Tyr	ttt Phe 3490	tcc Ser	att Ile	gag Glu	tca Ser 3495	tct Ser	acc Thr	aaa Lys	gga Gly	gat Asp	gtc Val 3500	aag Lys	ggt Gly	10634
tcg Ser	gtt Val	ctt Leu 3505	tct Ser	cgg Arg	gaa Glu	tat Tyr	tca Ser 3510	gga Gly	act Thr	att Ile	gct Ala	agt Ser 3515	gag Glu	gcc Ala	aac Asn	10682
act Thr	tac Tyr 3520	ttg Leu	aat Asn	tcc Ser	aag Lys	agc Ser 3525	aca Thr	cgg Arg	tct Ser	tca Ser	gtg Val 3530	aag Lys	ctg Leu	cag Gln	ggc Gly	10730
act Thr 3535	tcc Ser	aaa Lys	att Ile	gat Asp	gat Asp 3540	atc Ile	tgg Trp	aac Asn	ctt Leu	gaa Glu 3545	gta Val	aaa Lys	gaa Glu	aat Asn	ttt Phe 3550	10778
gct Ala	gga Gly	gaa Glu	gcc Ala	aca Thr 3555	ctc Leu	caa Gln	cgc Arg	ata Ile	tat Tyr 3560	tcc Ser	ctc Leu	tgg Trp	gag Glu	cac His 3565	agt Ser	10826
acg Thr	aaa Lys	aac Asn	cac His 3570	tta Leu	cag Gln	cta Leu	gag Glu	ggc Gly 3575	ctc Leu	ttt Phe	ttc Phe	acc Thr	aac Asn 3580	gga Gly	gaa Glu	10874
cat His	aca Thr 3585	agc Ser	aaa Lys	gcc Ala	acc Thr	ctg Leu	gaa Glu 3590	ctc Leu	tct Ser	cca Pro	tgg Trp	caa Gln 3595	atg Met	tca Ser	gct Ala	10922
ctt Leu 3600	gtt Val	cag Gln	gtc Val	cat His	gca Ala	agt Ser 3605	cag Gln	ccc Pro	agt Ser	tcc Ser	ttc Phe 3610	cat His	gat Asp	ttc Phe	cct Pro	10970
gac Asp 3615	ctt Leu	ggc Gly	cag Gln	gaa Glu	gtg Val 3620	gcc Ala	ctg Leu	aat Asn	gct Ala	aac Asn 3625	act Thr	aag Lys	aac Asn	cag Gln	aag Lys 3630	11018
atc Ile	aga Arg	tgg Trp	aaa Lys	aat Asn 3635	gaa Glu	gtc Val	cgg Arg	att Ile	cat His 3640	tct Ser	ggg Gly	tct Ser	ttc Phe	cag Gln 3645	agc Ser	11066
cag Gln	gtc Val	gag Glu	ctt Leu 3650	tcc Ser	aat Asn	gac Asp	caa Gln	gaa Glu 3655	aag Lys	gca Ala	cac His	ctt Leu	gac Asp 3660	att Ile	gca Ala	11114
gga Gly	tcc Ser	tta Leu 3665	gaa Glu	gga Gly	cac His	cta Leu	agg Arg 3670	ttc Phe	ctc Leu	aaa Lys	aat Asn	atc Ile 3675	atc Ile	cta Leu	cca Pro	11162
gtc Val 3680	tat Tyr	gac Asp	aag Lys	agc Ser	tta Leu	tgg Trp 3685	gat Asp	ttc Phe	cta Leu	aag Lys	ctg Leu 3690	gat Asp	gta Val	acc Thr	acc Thr	11210
agc Ser 3695	att Ile	ggt Gly	agg Arg	aga Arg	cag Gln 3700	cat His	ctt Leu	cgt Arg	gtt Val	tca Ser 3705	act Thr	gcc Ala	ttt Phe	gtg Val 3710	tac Tyr	11258
acc Thr	aaa Lys	aac Asn	ccc Pro	aat Asn	ggc Gly	tat Tyr	tca Ser	ttc Phe	tcc Ser	atc Ile	cct Pro	gta Val	aaa Lys	gtt Val	ttg Leu	11306

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3715										3720				3725				
gct	gat	aaa	ttc	att	act	cct	ggg	ctg	aaa	cta	aat	gat	cta	aat	tca	11354		
Ala	Asp	Lys	Phe	Ile	Thr	Pro	Gly	Leu	Lys	Leu	Asn	Asp	Leu	Asn	Ser			
			3730					3735					3740					
ggt	ctt	gtc	atg	cct	acg	ttc	cat	gtc	cca	ttt	aca	gat	ctt	cag	gtt	11402		
Val	Leu	Val	Met	Pro	Thr	Phe	His	Val	Pro	Phe	Thr	Asp	Leu	Gln	Val			
		3745					3750					3755						
cca	tcg	tgc	aaa	ctt	gac	ttc	aga	gaa	ata	caa	atc	tat	aag	aag	ctg	11450		
Pro	Ser	Cys	Lys	Leu	Asp	Phe	Arg	Glu	Ile	Gln	Ile	Tyr	Lys	Lys	Leu			
		3760				3765					3770							
aga	act	tca	tca	ttt	gcc	ctc	aac	cta	cca	aca	ctc	ccc	gag	gta	aaa	11498		
Arg	Thr	Ser	Ser	Phe	Ala	Leu	Asn	Leu	Pro	Thr	Leu	Pro	Glu	Val	Lys			
3775					3780					3785					3790			
ttc	cct	gaa	gtt	gat	gtg	tta	aca	aaa	tat	tct	caa	cca	gaa	gac	tcc	11546		
Phe	Pro	Glu	Val	Asp	Val	Leu	Thr	Lys	Tyr	Ser	Gln	Pro	Glu	Asp	Ser			
				3795					3800					3805				
ttg	att	ccc	ttt	ttt	gag	ata	acc	gtg	cct	gaa	tct	cag	tta	act	gtg	11594		
Leu	Ile	Pro	Phe	Phe	Glu	Ile	Thr	Val	Pro	Glu	Ser	Gln	Leu	Thr	Val			
			3810					3815					3820					
tcc	cag	ttc	acg	ctt	cca	aaa	agt	gtt	tca	gat	ggc	att	gct	gct	ttg	11642		
Ser	Gln	Phe	Thr	Leu	Pro	Lys	Ser	Val	Ser	Asp	Gly	Ile	Ala	Ala	Leu			
		3825					3830					3835						
gat	cta	aat	gca	gta	gcc	aac	aag	atc	gca	gac	ttt	gag	ttg	ccc	acc	11690		
Asp	Leu	Asn	Ala	Val	Ala	Asn	Lys	Ile	Ala	Asp	Phe	Glu	Leu	Pro	Thr			
	3840					3845					3850							
atc	atc	gtg	cct	gag	cag	acc	att	gag	att	ccc	tcc	att	aag	ttc	tct	11738		
Ile	Ile	Val	Pro	Glu	Gln	Thr	Ile	Glu	Ile	Pro	Ser	Ile	Lys	Phe	Ser			
3855					3860					3865					3870			
gta	cct	gct	gga	att	gtc	att	cct	tcc	ttt	caa	gca	ctg	act	gca	cgc	11786		
Val	Pro	Ala	Gly	Ile	Val	Ile	Pro	Ser	Phe	Gln	Ala	Leu	Thr	Ala	Arg			
			3875						3880					3885				
ttt	gag	gta	gac	tct	ccc	gtg	tat	aat	gcc	act	tgg	agt	gcc	agt	ttg	11834		
Phe	Glu	Val	Asp	Ser	Pro	Val	Tyr	Asn	Ala	Thr	Trp	Ser	Ala	Ser	Leu			
			3890					3895					3900					
aaa	aac	aaa	gca	gat	tat	gtt	gaa	aca	gtc	ctg	gat	tcc	aca	tgc	agc	11882		
Lys	Asn	Lys	Ala	Asp	Tyr	Val	Glu	Thr	Val	Leu	Asp	Ser	Thr	Cys	Ser			
		3905					3910					3915						
tca	acc	gta	cag	ttc	cta	gaa	tat	gaa	cta	aat	gtt	ttg	gga	aca	cac	11930		
Ser	Thr	Val	Gln	Phe	Leu	Glu	Tyr	Glu	Leu	Asn	Val	Leu	Gly	Thr	His			
	3920					3925					3930							
aaa	atc	gaa	gat	ggt	acg	tta	gcc	tct	aag	act	aaa	gga	aca	ctt	gca	11978		
Lys	Ile	Glu	Asp	Gly	Thr	Leu	Ala	Ser	Lys	Thr	Lys	Gly	Thr	Leu	Ala			
3935					3940					3945					3950			
cac	cgt	gac	ttc	agt	gca	gaa	tat	gaa	gaa	gat	ggc	aaa	ttt	gaa	gga	12026		
His	Arg	Asp	Phe	Ser	Ala	Glu	Tyr	Glu	Glu	Asp	Gly	Lys	Phe	Glu	Gly			
				3955					3960					3965				
ctt	cag	gaa	tgg	gaa	gga	aaa	gcg	cac	ctc	aat	atc	aaa	agc	cca	gcg	12074		
Leu	Gln	Glu	Trp	Glu	Gly	Lys	Ala	His	Leu	Asn	Ile	Lys	Ser	Pro	Ala			

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3970	3975	3980	
ttc acc gat ctc cat ctg cgc tac cag aaa gac aag aaa ggc atc tcc Phe Thr Asp Leu His Leu Arg Tyr Gln Lys Asp Lys Lys Gly Ile Ser 3985 3990 3995			12122
acc tca gca gcc tcc cca gcc gta ggc acc gtg ggc atg gat atg gat Thr Ser Ala Ala Ser Pro Ala Val Gly Thr Val Gly Met Asp Met Asp 4000 4005 4010			12170
gaa gat gac gac ttt tct aaa tgg aac ttc tac tac agc cct cag tcc Glu Asp Asp Asp Phe Ser Lys Trp Asn Phe Tyr Tyr Ser Pro Gln Ser 4015 4020 4025 4030			12218
tct cca gat aaa aaa ctc acc ata ttc aaa act gag ttg agg gtc cgg Ser Pro Asp Lys Lys Leu Thr Ile Phe Lys Thr Glu Leu Arg Val Arg 4035 4040 4045			12266
gaa tct gat gag gaa act cag atc aaa gtt aat tgg gaa gaa gag gca Glu Ser Asp Glu Glu Thr Gln Ile Lys Val Asn Trp Glu Glu Glu Ala 4050 4055 4060			12314
gct tct ggc ttg cta acc tct ctg aaa gac aac gtg ccc aag gcc aca Ala Ser Gly Leu Leu Thr Ser Leu Lys Asp Asn Val Pro Lys Ala Thr 4065 4070 4075			12362
ggg gtc ctt tat gat tat gtc aac aag tac cac tgg gaa cac aca ggg Gly Val Leu Tyr Asp Tyr Val Asn Lys Tyr His Trp Glu His Thr Gly 4080 4085 4090			12410
ctc acc ctg aga gaa gtg tct tca aag ctg aga aga aat ctg cag aac Leu Thr Leu Arg Glu Val Ser Ser Lys Leu Arg Arg Asn Leu Gln Asn 4095 4100 4105 4110			12458
aat gct gag tgg gtt tat caa ggg gcc att agg caa att gat gat atc Asn Ala Glu Trp Val Tyr Gln Gly Ala Ile Arg Gln Ile Asp Asp Ile 4115 4120 4125			12506
gac gtg agg ttc cag aaa gca gcc agt ggc acc act ggg acc tac caa Asp Val Arg Phe Gln Lys Ala Ala Ser Gly Thr Thr Gly Thr Tyr Gln 4130 4135 4140			12554
gag tgg aag gac aag gcc cag aat ctg tac cag gaa ctg ttg act cag Glu Trp Lys Asp Lys Ala Gln Asn Leu Tyr Gln Glu Leu Leu Thr Gln 4145 4150 4155			12602
gaa ggc caa gcc agt ttc cag gga ctc aag gat aac gtg ttt gat ggc Glu Gly Gln Ala Ser Phe Gln Gly Leu Lys Asp Asn Val Phe Asp Gly 4160 4165 4170			12650
ttg gta cga gtt act caa aaa ttc cat atg aaa gtc aag cat ctg att Leu Val Arg Val Thr Gln Lys Phe His Met Lys Val Lys His Leu Ile 4175 4180 4185 4190			12698
gac tca ctc att gat ttt ctg aac ttc ccc aga ttc cag ttt ccg ggg Asp Ser Leu Ile Asp Phe Leu Asn Phe Pro Arg Phe Gln Phe Pro Gly 4195 4200 4205			12746
aaa cct ggg ata tac act agg gag gaa ctt tgc act atg ttc ata agg Lys Pro Gly Ile Tyr Thr Arg Glu Glu Leu Cys Thr Met Phe Ile Arg 4210 4215 4220			12794
gag gta ggg acg gta ctg tcc cag gta tat tcg aaa gtc cat aat ggt Glu Val Gly Thr Val Leu Ser Gln Val Tyr Ser Lys Val His Asn Gly 4225 4230 4235			12842
tca gaa ata ctg ttt tcc tat ttc caa gac cta gtg att aca ctt cct			12890

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Ser	Glu	Ile	Leu	Phe	Ser	Tyr	Phe	Gln	Asp	Leu	Val	Ile	Thr	Leu	Pro		
4240						4245					4250						
ttc	gag	tta	agg	aaa	cat	aaa	cta	ata	gat	gta	atc	tcg	atg	tat	agg	12938	
Phe	Glu	Leu	Arg	Lys	His	Lys	Leu	Ile	Asp	Val	Ile	Ser	Met	Tyr	Arg		
4255					4260					4265					4270		
gaa	ctg	ttg	aaa	gat	tta	tca	aaa	gaa	gcc	caa	gag	gta	ttt	aaa	gcc	12986	
Glu	Leu	Leu	Lys	Asp	Leu	Ser	Lys	Glu	Ala	Gln	Glu	Val	Phe	Lys	Ala		
				4275					4280					4285			
att	cag	tct	ctc	aag	acc	aca	gag	gtg	cta	cgt	aat	ctt	cag	gac	ctt	13034	
Ile	Gln	Ser	Leu	Lys	Thr	Thr	Glu	Val	Leu	Arg	Asn	Leu	Gln	Asp	Leu		
			4290					4295					4300				
tta	caa	ttc	att	ttc	caa	cta	ata	gaa	gat	aac	att	aaa	cag	ctg	aaa	13082	
Leu	Gln	Phe	Ile	Phe	Gln	Leu	Ile	Glu	Asp	Asn	Ile	Lys	Gln	Leu	Lys		
		4305					4310					4315					
gag	atg	aaa	ttt	act	tat	ctt	att	aat	tat	atc	caa	gat	gag	atc	aac	13130	
Glu	Met	Lys	Phe	Thr	Tyr	Leu	Ile	Asn	Tyr	Ile	Gln	Asp	Glu	Ile	Asn		
	4320					4325					4330						
aca	atc	ttc	aat	gat	tat	atc	cca	tat	gtt	ttt	aaa	ttg	ttg	aaa	gaa	13178	
Thr	Ile	Phe	Asn	Asp	Tyr	Ile	Pro	Tyr	Val	Phe	Lys	Leu	Leu	Lys	Glu		
4335					4340					4345					4350		
aac	cta	tgc	ctt	aat	ctt	cat	aag	ttc	aat	gaa	ttt	att	caa	aac	gag	13226	
Asn	Leu	Cys	Leu	Asn	Leu	His	Lys	Phe	Asn	Glu	Phe	Ile	Gln	Asn	Glu		
				4355					4360					4365			
ctt	cag	gaa	gct	tct	caa	gag	tta	cag	cag	atc	cat	caa	tac	att	atg	13274	
Leu	Gln	Glu	Ala	Ser	Gln	Glu	Leu	Gln	Gln	Ile	His	Gln	Tyr	Ile	Met		
			4370					4375					4380				
gcc	ctt	cgt	gaa	gaa	tat	ttt	gat	cca	agt	ata	gtt	ggc	tggt	aca	gtg	13322	
Ala	Leu	Arg	Glu	Glu	Tyr	Phe	Asp	Pro	Ser	Ile	Val	Gly	Trp	Thr	Val		
		4385					4390					4395					
aaa	tat	tat	gaa	ctt	gaa	gaa	aag	ata	gtc	agt	ctg	atc	aag	aac	ctg	13370	
Lys	Tyr	Tyr	Glu	Leu	Glu	Glu	Lys	Ile	Val	Ser	Leu	Ile	Lys	Asn	Leu		
	4400					4405					4410						
tta	gtt	gct	ctt	aag	gac	ttc	cat	tct	gaa	tat	att	gtc	agt	gcc	tct	13418	
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gcc Ala	tat Tyr	ctt Leu	atg Met	ttg Leu 565	atg Met	agg Arg	agt Ser	cct Pro	tca Ser 570	cag Gln	gca Ala	gat Asp	att Ile	aac Asn 575	aaa Lys	1728
att Ile	gtc Val	caa Gln	att Ile 580	cta Leu	cca Pro	tgg Trp	gaa Glu	cag Gln 585	aat Asn	gag Glu	caa Gln	gtg Val	aag Lys 590	aac Asn	ttt Phe	1776
gtg Val	gct Ala	tcc Ser 595	cat His	att Ile	gcc Ala	aat Asn	atc Ile 600	ttg Leu	aac Asn	tca Ser	gaa Glu	gaa Glu 605	ttg Leu	gat Asp	atc Ile	1824
caa Gln 610	gat Asp	ctg Leu	aaa Lys	aag Lys	tta Leu	gtg Val 615	aaa Lys	gaa Glu	gct Ala	ctg Leu 620	aaa Glu	gaa Glu	tct Ser	caa Gln	ctt Leu	1872
cca Pro 625	act Thr	gtc Val	atg Met	gac Asp 630	ttc Phe	aga Arg	aaa Lys	ttc Phe	tct Ser	cgg Arg 635	aac Asn	tat Tyr	caa Gln	ctc Leu	tac Tyr 640	1920
aaa Lys	tct Ser	gtt Val	tct Ser	ctt Leu 645	cca Pro	tca Ser	ctt Leu	gac Asp 650	cca Pro	gcc Ala	tca Ser	gcc Ala	aaa Lys	ata Ile 655	gaa Glu	1968
ggg Gly	aat Asn	ctt Leu	ata Ile 660	ttt Phe	gat Asp	cca Pro	aat Asn	aac Asn 665	tac Tyr	ctt Leu	cct Pro	aaa Lys	gaa Glu 670	agc Ser	atg Met	2016
ctg Leu	aaa Lys	act Thr 675	acc Thr	ctc Leu	act Thr	gcc Ala	ttt Phe 680	gga Gly	ttt Phe	gct Ala	tca Ser	gct Ala 685	gac Asp	ctc Leu	atc Ile	2064
gag Glu 690	att Ile	ggc Gly	ttg Leu	gaa Glu	gga Gly	aaa Lys 695	ggc Gly	ttt Phe	gag Glu	cca Pro	aca Thr 700	ttg Leu	gag Glu	gct Ala	cct Pro	2112
ttt Phe 705	ggg Gly	aag Lys	caa Gln	gga Gly	ttt Phe 710	ttc Phe	cca Pro	gac Asp	agt Ser	gtc Val 715	aac Asn	aaa Lys	gct Ala	ttg Leu	tac Tyr 720	2160
tgg Trp	gtt Val	aat Asn	ggt Gly	caa Gln 725	gtt Val	cct Pro	gat Asp	ggt Gly	gtc Val 730	tct Ser	aag Lys	gtc Val	tta Leu	gtg Val 735	gac Asp	2208

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cac His	ttt Phe	ggc Gly	tat Tyr 740	acc Thr	aaa Lys	gat Asp	gat Asp	aaa Lys 745	cat His	gag Glu	cag Gln	gat Asp	atg Met 750	gta Val	aat Asn	2256
gga Gly	ata Ile	atg Met 755	ctc Leu	agt Ser	gtt Val	gag Glu	aag Lys 760	ctg Leu	att Ile	aaa Lys	gat Asp	ttg Leu 765	aaa Lys	tcc Ser	aaa Lys	2304
gaa Glu	gtc Val 770	ccg Pro	gaa Glu	gcc Ala	aga Arg	gcc Ala 775	tac Tyr	ctc Leu	cgc Arg	atc Ile	ttg Leu 780	gga Gly	gag Glu	gag Glu	ctt Leu	2352
ggt Gly 785	ttt Phe	gcc Ala	agt Ser	ctc Leu	cat His 790	gac Asp	ctc Leu	cga Arg	ctc Leu	ctg Leu 795	gga Gly	aag Lys	ctg Leu	ctt Leu	ctg Leu 800	2400
atg Met	ggt Gly	gcc Ala	cgc Arg	act Thr 805	ctg Leu	cag Gln	ggg Gly	atc Ile	ccc Pro 810	cag Gln	atg Met	att Ile	gga Gly	gag Glu 815	gtc Val	2448
atc Ile	agg Arg	aag Lys	ggc Gly 820	tca Ser	aag Lys	aat Asn	gac Asp	ttt Phe 825	ttt Phe	ctt Leu	cac His	tac Tyr	atc Ile 830	ttc Phe	atg Met	2496
gag Glu	aat Asn	gcc Ala 835	ttt Phe	gaa Glu	ctc Leu	ccc Pro	act Thr 840	gga Gly	gct Ala	gga Gly	tta Leu	cag Gln 845	ttg Leu	caa Gln	ata Ile	2544
tct Ser	tca Ser 850	tct Ser	gga Gly	gtc Val	att Ile	gct Ala 855	ccc Pro	gga Gly	gcc Ala	aag Lys	gct Ala 860	gga Gly	gta Val	aaa Lys	ctg Leu	2592
gaa Glu 865	gta Val	gcc Ala	aac Asn	atg Met	cag Gln 870	gct Ala	gaa Glu	ctg Leu	gtg Val	gca Ala 875	aaa Lys	ccc Pro	tcc Ser	gtg Val	tct Ser 880	2640
gtg Val	gag Glu	ttt Phe	gtg Val	aca Thr 885	aat Asn	atg Met	ggc Gly	atc Ile	atc Ile 890	att Ile	ccg Pro	gac Asp	ttc Phe	gct Ala 895	agg Arg	2688
agt Ser	ggg Gly	gtc Val	cag Gln 900	atg Met	aac Asn	acc Thr	aac Asn	ttc Phe 905	ttc Phe	cac His	gag Glu	tcg Ser	ggt Gly 910	ctg Leu	gag Glu	2736
gct Ala	cat His	gtt Val 915	gcc Ala	cta Leu	aaa Lys	gct Ala	ggg Gly 920	aag Lys	ctg Leu	aag Lys	ttt Phe	atc Ile 925	att Ile	cct Pro	tcc Ser	2784
cca Pro	aag Lys 930	aga Arg	cca Pro	gtc Val	aag Lys	ctg Leu 935	ctc Leu	agt Ser	gga Gly	ggc Gly	aac Asn 940	aca Thr	tta Leu	cat His	ttg Leu	2832
gtc Val 945	tct Ser	acc Thr	acc Thr	aaa Lys	acg Thr 950	gag Glu	gtc Val	atc Ile	cca Pro	cct Pro 955	ctc Leu	att Ile	gag Glu	aac Asn	agg Arg 960	2880
cag Gln	tcc Ser	tgg Trp	tca Ser	gtt Val 965	tgc Cys	aag Lys	caa Gln	gtc Val	ttt Phe 970	cct Pro	ggc Gly	ctg Leu	aat Asn	tac Tyr 975	tgc Cys	2928
acc Thr	tca Ser	ggc Gly	gct Ala 980	tac Tyr	tcc Ser	aac Asn	gcc Ala	agc Ser 985	tcc Ser	aca Thr	gac Asp	tcc Ser	gcc Ala 990	tcc Ser	tac Tyr	2976
tat	ccg	ctg	acc	ggg	gac	acc	aga	tta	gag	ctg	gaa	ctg	agg	cct	aca	3024

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Tyr	Pro	Leu	Thr	Gly	Asp	Thr	Arg	Leu	Glu	Leu	Glu	Leu	Arg	Pro	Thr		
		995					1000						1005				
gga	gag	att	gag	cag	tat	tct	gtc	agc	gca	acc	tat	gag	ctc	cag	aga	3072	
Gly	Glu	Ile	Glu	Gln	Tyr	Ser	Val	Ser	Ala	Thr	Tyr	Glu	Leu	Gln	Arg		
	1010					1015					1020						
gag	gac	aga	gcc	ttg	gtg	gat	acc	ctg	aag	ttt	gta	act	caa	gca	gaa	3120	
Glu	Asp	Arg	Ala	Leu	Val	Asp	Thr	Leu	Lys	Phe	Val	Thr	Gln	Ala	Glu		
1025					1030					1035					1040		
ggc	gcg	aag	cag	act	gag	gct	acc	atg	aca	ttc	aaa	tat	aat	cgg	cag	3168	
Gly	Ala	Lys	Gln	Thr	Glu	Ala	Thr	Met	Thr	Phe	Lys	Tyr	Asn	Arg	Gln		
				1045					1050					1055			
agt	atg	acc	ttg	tcc	agt	gaa	gtc	caa	att	ccg	gat	ttt	gat	gtt	gac	3216	
Ser	Met	Thr	Leu	Ser	Ser	Glu	Val	Gln	Ile	Pro	Asp	Phe	Asp	Val	Asp		
			1060					1065					1070				
ctc	gga	aca	atc	ctc	aga	gtt	aat	gat	gaa	tct	act	gag	ggc	aaa	acg	3264	
Leu	Gly	Thr	Ile	Leu	Arg	Val	Asn	Asp	Glu	Ser	Thr	Glu	Gly	Lys	Thr		
		1075					1080					1085					
tct	tac	aga	ctc	acc	ctg	gac	att	cag	aac	aag	aaa	att	act	gag	gtc	3312	
Ser	Tyr	Arg	Leu	Thr	Leu	Asp	Ile	Gln	Asn	Lys	Lys	Ile	Thr	Glu	Val		
	1090					1095					1100						
gcc	ctc	atg	ggc	cac	cta	agt	tgt	gac	aca	aag	gaa	gaa	aga	aaa	atc	3360	
Ala	Leu	Met	Gly	His	Leu	Ser	Cys	Asp	Thr	Lys	Glu	Glu	Arg	Lys	Ile		
1105					1110					1115					1120		
aag	ggt	gtt	att	tcc	ata	ccc	cgt	ttg	caa	gca	gaa	gcc	aga	agt	gag	3408	
Lys	Gly	Val	Ile	Ser	Ile	Pro	Arg	Leu	Gln	Ala	Glu	Ala	Arg	Ser	Glu		
				1125					1130					1135			
atc	ctc	gcc	cac	tgg	tcg	cct	gcc	aaa	ctg	ctt	ctc	caa	atg	gac	tca	3456	
Ile	Leu	Ala	His	Trp	Ser	Pro	Ala	Lys	Leu	Leu	Leu	Gln	Met	Asp	Ser		
			1140					1145					1150				
tct	gct	aca	gct	tat	ggc	tcc	aca	gtt	tcc	aag	agg	gtg	gca	tgg	cat	3504	
Ser	Ala	Thr	Ala	Tyr	Gly	Ser	Thr	Val	Ser	Lys	Arg	Val	Ala	Trp	His		
		1155					1160					1165					
tat	gat	gaa	gag	aag	att	gaa	ttt	gaa	tgg	aac	aca	ggc	acc	aat	gta	3552	
Tyr	Asp	Glu	Glu	Lys	Ile	Glu	Phe	Glu	Trp	Asn	Thr	Gly	Thr	Asn	Val		
	1170					1175					1180						
gat	acc	aaa	aaa	atg	act	tcc	aat	ttc	cct	gtg	gat	ctc	tcc	gat	tat	3600	
Asp	Thr	Lys	Lys	Met	Thr	Ser	Asn	Phe	Pro	Val	Asp	Leu	Ser	Asp	Tyr		
1185					1190					1195					1200		
cct	aag	agc	ttg	cat	atg	tat	gct	aat	aga	ctc	ctg	gat	cac	aga	gtc	3648	
Pro	Lys	Ser	Leu	His	Met	Tyr	Ala	Asn	Arg	Leu	Leu	Asp	His	Arg	Val		
				1205					1210					1215			
cct	caa	aca	gac	atg	act	ttc	cgg	cac	gtg	ggt	tcc	aaa	tta	ata	gtt	3696	
Pro	Gln	Thr	Asp	Met	Thr	Phe	Arg	His	Val	Gly	Ser	Lys	Leu	Ile	Val		
			1220					1225					1230				
gca	atg	agc	tca	tgg	ctt	cag	aag	gca	tct	ggg	agt	ctt	cct	tat	acc	3744	
Ala	Met	Ser	Ser	Trp	Leu	Gln	Lys	Ala	Ser	Gly	Ser	Leu	Pro	Tyr	Thr		
		1235					1240					1245					
cag	act	ttg	caa	gac	cac	ctc	aat	agc	ctg	aag	gag	ttc	aac	ctc	cag	3792	
Gln	Thr	Leu	Gln	Asp	His	Leu	Asn	Ser	Leu	Lys	Glu	Phe	Asn	Leu	Gln		

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1250	1255	1260	
aac atg gga ttg cca gac tcc cac atc cca gaa aac ctc ttc tta aaa			3840
Asn Met Gly Leu Pro Asp Ser His Ile Pro Glu Asn Leu Phe Leu Lys			
1265	1270	1275	1280
agc gat ggc cgc gtc aaa tat acc ttg aac aag aac agt ttg aaa att			3888
Ser Asp Gly Arg Val Lys Tyr Thr Leu Asn Lys Asn Ser Leu Lys Ile			
	1285	1290	1295
gag att cct ttg cct ttt ggt ggc aaa tcc tcc aga gat cta aag atg			3936
Glu Ile Pro Leu Pro Phe Gly Gly Lys Ser Ser Arg Asp Leu Lys Met			
	1300	1305	1310
tta gag act gtt agg aca cca gcc ctc cac ttc aag tct gtg gga ttc			3984
Leu Glu Thr Val Arg Thr Pro Ala Leu His Phe Lys Ser Val Gly Phe			
	1315	1320	1325
cat ctg cca tct cga gag ttc caa gtc cct act ttt acc att ccc aag			4032
His Leu Pro Ser Arg Glu Phe Gln Val Pro Thr Phe Thr Ile Pro Lys			
	1330	1335	1340
ttg tat caa ctg caa gtg cct ctc ctg ggt gtt cta gac ctc tcc acg			4080
Leu Tyr Gln Leu Gln Val Pro Leu Leu Gly Val Leu Asp Leu Ser Thr			
	1345	1350	1355
aat gtc tac agc aac ttg tac aac tgg tcc gcc tcc tac agt ggt ggc			4128
Asn Val Tyr Ser Asn Leu Tyr Asn Trp Ser Ala Ser Tyr Ser Gly Gly			
	1365	1370	1375
aac acc agc aca gac cat ttc agc ctt cgg gct cgt tac cac atg aag			4176
Asn Thr Ser Thr Asp His Phe Ser Leu Arg Ala Arg Tyr His Met Lys			
	1380	1385	1390
gct gac tct gtg gtt gac ctg ctt tcc tac aat gtg caa gga tct gga			4224
Ala Asp Ser Val Val Asp Leu Leu Ser Tyr Asn Val Gln Gly Ser Gly			
	1395	1400	1405
gaa aca aca tat gac cac aag aat acg ttc aca cta tca tgt gat ggg			4272
Glu Thr Thr Tyr Asp His Lys Asn Thr Phe Thr Leu Ser Cys Asp Gly			
	1410	1415	1420
tct cta cgc cac aaa ttt cta gat tcg aat atc aaa ttc agt cat gta			4320
Ser Leu Arg His Lys Phe Leu Asp Ser Asn Ile Lys Phe Ser His Val			
	1425	1430	1435
gaa aaa ctt gga aac aac cca gtc tca aaa ggt tta cta ata ttc gat			4368
Glu Lys Leu Gly Asn Asn Pro Val Ser Lys Gly Leu Leu Ile Phe Asp			
	1445	1450	1455
gca tct agt tcc tgg gga cca cag atg tct gct tca gtt cat ttg gac			4416
Ala Ser Ser Ser Trp Gly Pro Gln Met Ser Ala Ser Val His Leu Asp			
	1460	1465	1470
tcc aaa aag aaa cag cat ttg ttt gtc aaa gaa gtc aag att gat ggg			4464
Ser Lys Lys Lys Gln His Leu Phe Val Lys Glu Val Lys Ile Asp Gly			
	1475	1480	1485
cag ttc aga gtc tct tcg ttc tat gct aaa ggc aca tat ggc ctg tct			4512
Gln Phe Arg Val Ser Ser Phe Tyr Ala Lys Gly Thr Tyr Gly Leu Ser			
	1490	1495	1500
tgt cag agg gat cct aac act ggc cgg ctc aat gga gag tcc aac ctg			4560
Cys Gln Arg Asp Pro Asn Thr Gly Arg Leu Asn Gly Glu Ser Asn Leu			
	1505	1510	1515
agg ttt aac tcc tcc tac ctc caa ggc acc aac cag ata aca gga aga			4608

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Arg	Phe	Asn	Ser	Ser	Tyr	Leu	Gln	Gly	Thr	Asn	Gln	Ile	Thr	Gly	Arg	
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tat	gaa	gat	gga	acc	ctc	tcc	ctc	acc	tcc	acc	tct	gat	ctg	caa	agt	4656
Tyr	Glu	Asp	Gly	Thr	Leu	Ser	Leu	Thr	Ser	Thr	Ser	Asp	Leu	Gln	Ser	
			1540					1545					1550			
ggc	atc	att	aaa	aat	act	gct	tcc	cta	aag	tat	gag	aac	tac	gag	ctg	4704
Gly	Ile	Ile	Lys	Asn	Thr	Ala	Ser	Leu	Lys	Tyr	Glu	Asn	Tyr	Glu	Leu	
			1555				1560					1565				
act	tta	aaa	tct	gac	acc	aat	ggg	aag	tat	aag	aac	ttt	gcc	act	tct	4752
Thr	Leu	Lys	Ser	Asp	Thr	Asn	Gly	Lys	Tyr	Lys	Asn	Phe	Ala	Thr	Ser	
			1570			1575					1580					
aac	aag	atg	gat	atg	acc	ttc	tct	aag	caa	aat	gca	ctg	ctg	cgt	tct	4800
Asn	Lys	Met	Asp	Met	Thr	Phe	Ser	Lys	Gln	Asn	Ala	Leu	Leu	Arg	Ser	
1585					1590					1595					1600	
gaa	tat	cag	gct	gat	tac	gag	tca	ttg	agg	ttc	ttc	agc	ctg	ctt	tct	4848
Glu	Tyr	Gln	Ala	Asp	Tyr	Glu	Ser	Leu	Arg	Phe	Phe	Ser	Leu	Leu	Ser	
				1605					1610					1615		
gga	tca	cta	aat	tcc	cat	ggg	ctt	gag	tta	aat	gct	gac	atc	tta	ggc	4896
Gly	Ser	Leu	Asn	Ser	His	Gly	Leu	Glu	Leu	Asn	Ala	Asp	Ile	Leu	Gly	
			1620				1625						1630			
act	gac	aaa	att	aat	agt	ggg	gct	cac	aag	gcg	aca	cta	agg	att	ggc	4944
Thr	Asp	Lys	Ile	Asn	Ser	Gly	Ala	His	Lys	Ala	Thr	Leu	Arg	Ile	Gly	
			1635			1640						1645				
caa	gat	gga	ata	tct	acc	agt	gca	acg	acc	aac	ttg	aag	tgt	agt	ctc	4992
Gln	Asp	Gly	Ile	Ser	Thr	Ser	Ala	Thr	Thr	Asn	Leu	Lys	Cys	Ser	Leu	
			1650			1655					1660					
ctg	gtg	ctg	gag	aat	gag	ctg	aat	gca	gag	ctt	ggc	ctc	tct	ggg	gca	5040
Leu	Val	Leu	Glu	Asn	Glu	Leu	Asn	Ala	Glu	Leu	Gly	Leu	Ser	Gly	Ala	
1665					1670					1675				1680		
tct	atg	aaa	tta	aca	aca	aat	ggc	cgc	ttc	agg	gaa	cac	aat	gca	aaa	5088
Ser	Met	Lys	Leu	Thr	Thr	Asn	Gly	Arg	Phe	Arg	Glu	His	Asn	Ala	Lys	
				1685					1690					1695		
ttc	agt	ctg	gat	ggg	aaa	gcc	gcc	ctc	aca	gag	cta	tca	ctg	gga	agt	5136
Phe	Ser	Leu	Asp	Gly	Lys	Ala	Ala	Leu	Thr	Glu	Leu	Ser	Leu	Gly	Ser	
			1700					1705					1710			
gct	tat	cag	gcc	atg	att	ctg	ggg	gtc	gac	agc	aaa	aac	att	ttc	aac	5184
Ala	Tyr	Gln	Ala	Met	Ile	Leu	Gly	Val	Asp	Ser	Lys	Asn	Ile	Phe	Asn	
			1715				1720					1725				
ttc	aag	gtc	agt	caa	gaa	gga	ctt	aag	ctc	tca	aat	gac	atg	atg	ggc	5232
Phe	Lys	Val	Ser	Gln	Glu	Gly	Leu	Lys	Leu	Ser	Asn	Asp	Met	Met	Gly	
			1730			1735					1740					
tca	tat	gct	gaa	atg	aaa	ttt	gac	cac	aca	aac	agt	ctg	aac	att	gca	5280
Ser	Tyr	Ala	Glu	Met	Lys	Phe	Asp	His	Thr	Asn	Ser	Leu	Asn	Ile	Ala	
1745				1750						1755					1760	
ggc	tta	tca	ctg	gac	ttc	tct	tca	aaa	ctt	gac	aac	att	tac	agc	tct	5328
Gly	Leu	Ser	Leu	Asp	Phe	Ser	Ser	Lys	Leu	Asp	Asn	Ile	Tyr	Ser	Ser	
				1765					1770				1775			
gac	aag	ttt	tat	aag	caa	act	gtt	aat	tta	cag	cta	cag	ccc	tat	tct	5376
Asp	Lys	Phe	Tyr	Lys	Gln	Thr	Val	Asn	Leu	Gln	Leu	Gln	Pro	Tyr	Ser	

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1785

1780	1785	1790	
ctg gta act act tta aac agt gac ctg aaa tac aat gct ctg gat ctc Leu Val Thr Thr Leu Asn Ser Asp Leu Lys Tyr Asn Ala Leu Asp Leu 1795 1800 1805			5424
acc aac aat ggg aaa cta cgg cta gaa ccc ctg aag ctg cat gtg gct Thr Asn Asn Gly Lys Leu Arg Leu Glu Pro Leu Lys Leu His Val Ala 1810 1815 1820			5472
ggt aac cta aaa gga gcc tac caa aat aat gaa ata aaa cac atc tat Gly Asn Leu Lys Gly Ala Tyr Gln Asn Asn Glu Ile Lys His Ile Tyr 1825 1830 1835 1840			5520
gcc atc tct tct gct gcc tta tca gca agc tat aaa gca gac act gtt Ala Ile Ser Ser Ala Ala Leu Ser Ala Ser Tyr Lys Ala Asp Thr Val 1845 1850 1855			5568
gct aag gtt cag ggt gtg gag ttt agc cat ggg ctc aac aca gac atc Ala Lys Val Gln Gly Val Glu Phe Ser His Gly Leu Asn Thr Asp Ile 1860 1865 1870			5616
gct ggg ctg gct tca gcc att gac atg agc aca aac tat aat tca gac Ala Gly Leu Ala Ser Ala Ile Asp Met Ser Thr Asn Tyr Asn Ser Asp 1875 1880 1885			5664
tca ctg cat ttc agc aat gtc ttc cgt tct gta atg gcc ccg ttt acc Ser Leu His Phe Ser Asn Val Phe Arg Ser Val Met Ala Pro Phe Thr 1890 1895 1900			5712
atg acc atc gat gca cat aca aat ggc aat ggg aaa ctc gct ctc tgg Met Thr Ile Asp Ala His Thr Asn Gly Asn Gly Lys Leu Ala Leu Trp 1905 1910 1915 1920			5760
gga gaa cat act ggg cag ctg tat agc aaa ttc ctg ttg aaa gca gaa Gly Glu His Thr Gly Gln Leu Tyr Ser Lys Phe Leu Leu Lys Ala Glu 1925 1930 1935			5808
cct ctg gca ttt act ttc tct cat gat tac aaa ggc tcc aca agt cat Pro Leu Ala Phe Thr Phe Ser His Asp Tyr Lys Gly Ser Thr Ser His 1940 1945 1950			5856
cat ctc gtg tct agg aaa agc atc agt gca gct ctt gaa cac aaa gtc His Leu Val Ser Arg Lys Ser Ile Ser Ala Ala Leu Glu His Lys Val 1955 1960 1965			5904
agt gcc ctg ctt act cca gct gag cag aca ggc acc tgg aaa ctc aag Ser Ala Leu Leu Thr Pro Ala Glu Gln Thr Gly Thr Trp Lys Leu Lys 1970 1975 1980			5952
acc caa ttt aac aac aat gaa tac agc cag gac ttg gat gct tac aac Thr Gln Phe Asn Asn Asn Glu Tyr Ser Gln Asp Leu Asp Ala Tyr Asn 1985 1990 1995 2000			6000
act aaa gat aaa att ggc gtg gag ctt act gga cga act ctg gct gac Thr Lys Asp Lys Ile Gly Val Glu Leu Thr Gly Arg Thr Leu Ala Asp 2005 2010 2015			6048
cta act cta cta gac tcc cca att aaa gtg cca ctt tta ctc agt gag Leu Thr Leu Asp Ser Pro Ile Lys Val Pro Leu Leu Ser Glu 2020 2025 2030			6096
ccc atc aat atc aat gat gct tta gag atg aga gat gcc gtt gag aag Pro Ile Asn Ile Asn Asp Ala Leu Glu Met Arg Asp Ala Val Glu Lys 2035 2040 2045			6144

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ccc Pro 2050	caa Gln 2050	gaa Glu 2050	ttt Phe 2050	aca Thr 2050	att Ile 2055	gtt Val 2055	gct Ala 2055	ttt Phe 2060	gta Val 2060	aag Lys 2060	tat Tyr 2060	gat Asp 2060	aaa Lys 2060	aac Asn 2060	caa Gln 2060	6192
gat Asp 2065	gtt Val 2065	cac His 2065	tcc Ser 2065	att Ile 2070	aac Asn 2070	ctc Leu 2070	cca Pro 2070	ttt Phe 2075	ttt Phe 2075	gag Glu 2075	acc Thr 2075	ttg Leu 2075	caa Gln 2080	gaa Glu 2080	tat Tyr 2080	6240
ttt Phe 2085	gag Glu 2085	agg Arg 2085	aat Asn 2085	cga Arg 2085	caa Gln 2085	acc Thr 2085	att Ile 2090	ata Ile 2090	gtt Val 2090	gta Val 2090	ctg Leu 2095	gaa Glu 2095	aac Asn 2095	gta Val 2095	cag Gln 2095	6288
aga Arg 2100	aac Asn 2100	ctg Leu 2100	aag Lys 2100	cac His 2100	atc Ile 2100	aat Asn 2100	att Ile 2105	gat Asp 2105	caa Gln 2105	ttt Phe 2105	gta Val 2110	aga Arg 2110	aaa Lys 2110	tac Tyr 2110	aga Arg 2110	6336
gca Ala 2115	gcc Ala 2115	ctg Leu 2115	gga Gly 2115	aaa Lys 2115	ctc Leu 2120	cca Pro 2120	cag Gln 2120	caa Gln 2120	gct Ala 2125	aat Asn 2125	gat Asp 2125	tat Tyr 2125	ctg Leu 2125	aat Asn 2125	tca Ser 2125	6384
ttc Phe 2130	aat Asn 2130	tgg Trp 2130	gag Glu 2135	aga Arg 2135	caa Gln 2135	gtt Val 2135	tca Ser 2135	cat His 2140	gcc Ala 2140	aag Lys 2140	gag Glu 2140	aaa Lys 2140	ctg Leu 2140	act Thr 2140	gct Ala 2140	6432
ctc Leu 2145	aca Thr 2145	aaa Lys 2145	aag Lys 2145	tat Tyr 2150	aga Arg 2150	att Ile 2150	aca Thr 2150	gaa Glu 2155	aat Asn 2155	gat Asp 2155	ata Ile 2155	caa Gln 2155	att Ile 2155	gca Ala 2160	tta Leu 2160	6480
gat Asp 2165	gat Asp 2165	gcc Ala 2165	aaa Lys 2165	atc Ile 2165	aac Asn 2165	ttt Phe 2170	aat Asn 2170	gaa Glu 2170	aaa Lys 2170	cta Leu 2175	tct Ser 2175	caa Gln 2175	ctg Leu 2175	cag Gln 2175	aca Thr 2175	6528
tat Tyr 2180	atg Met 2180	ata Ile 2180	caa Gln 2180	ttt Phe 2180	gat Asp 2185	cag Gln 2185	tat Tyr 2185	att Ile 2185	aaa Lys 2185	gat Asp 2190	agt Ser 2190	tat Tyr 2190	gat Asp 2190	tta Leu 2190	cat His 2190	6576
gat Asp 2195	ttg Leu 2195	aaa Lys 2195	ata Ile 2200	gct Ala 2200	att Ile 2200	gct Ala 2200	aat Asn 2200	att Ile 2205	att Ile 2205	gat Asp 2205	gaa Glu 2205	atc Ile 2205	att Ile 2205	gaa Glu 2205	aaa Lys 2205	6624
tta Leu 2210	aaa Lys 2210	agt Ser 2210	ctt Leu 2215	gat Asp 2215	gag Glu 2215	cac His 2215	tat Tyr 2215	cat His 2220	acc Thr 2220	cgt Arg 2220	gta Val 2220	aat Asn 2220	tta Leu 2220	gta Val 2220	aaa Lys 2220	6672
aca Thr 2225	atc Ile 2225	cat His 2225	gat Asp 2230	cta Leu 2230	cat His 2230	ttg Leu 2230	ttt Phe 2235	att Ile 2235	gaa Glu 2235	aat Asn 2235	att Ile 2235	gat Asp 2240	ttt Phe 2240	aac Asn 2240	aaa Lys 2240	6720
agt Ser 2245	gga Gly 2245	agt Ser 2245	agt Ser 2245	act Thr 2245	gca Ala 2245	tcc Ser 2250	tgg Trp 2250	att Ile 2250	caa Gln 2250	aat Asn 2250	gtg Val 2255	gat Asp 2255	act Thr 2255	aag Lys 2255	tac Tyr 2255	6768
caa Gln 2260	atc Ile 2260	aga Arg 2260	atc Ile 2260	cag Gln 2260	ata Ile 2265	caa Gln 2265	gaa Glu 2265	aaa Lys 2265	ctg Leu 2265	cag Gln 2270	cag Gln 2270	ctt Leu 2270	aag Lys 2270	aga Arg 2270	cac His 2270	6816
ata Ile 2275	cag Gln 2275	aat Asn 2275	ata Ile 2280	gac Asp 2280	atc Ile 2280	cag Gln 2280	cac His 2280	cta Leu 2285	gct Ala 2285	gga Gly 2285	aag Lys 2285	tta Leu 2285	aaa Lys 2285	caa Gln 2285	cac His 2285	6864
att Ile 2290	gag Glu 2290	gct Ala 2290	att Ile 2295	gat Asp 2295	gtt Val 2295	aga Arg 2295	gtg Val 2295	ctt Leu 2300	tta Leu 2300	gat Asp 2300	caa Gln 2300	ttg Leu 2300	gga Gly 2300	act Thr 2300	aca Thr 2300	6912
att Ile 2300	tca Ser 2300	ttt Phe 2300	gaa Glu 2300	aga Arg 2300	ata Ile 2300	aat Asn 2300	gat Asp 2300	gtt Val 2300	ctt Leu 2300	gag Glu 2300	cat His 2300	gtc Val 2300	aaa Lys 2300	cac His 2300	ttt Phe 2300	6960

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2305	2310	2315	2320	
gtt ata aat ctt att ggg gat ttt gaa gta gct gag aaa atc aat gcc Val Ile Asn Leu Ile Gly Asp Phe Glu Val Ala Glu Lys Ile Asn Ala 2325 2330 2335				7008
ttc aga gcc aaa gtc cat gag tta atc gag agg tat gaa gta gac caa Phe Arg Ala Lys Val His Glu Leu Ile Glu Arg Tyr Glu Val Asp Gln 2340 2345 2350				7056
caa atc cag gtt tta atg gat aaa tta gta gag ttg gcc cac caa tac Gln Ile Gln Val Leu Met Asp Lys Leu Val Glu Leu Ala His Gln Tyr 2355 2360 2365				7104
aag ttg aag gag act att cag aag cta agc aat gtc cta caa caa gtt Lys Leu Lys Glu Thr Ile Gln Lys Leu Ser Asn Val Leu Gln Gln Val 2370 2375 2380				7152
aag ata aaa gat tac ttt gag aaa ttg gtt gga ttt att gat gat gct Lys Ile Lys Asp Tyr Phe Glu Lys Leu Val Gly Phe Ile Asp Asp Ala 2385 2390 2395 2400				7200
gtc aag aag ctt aat gaa tta tct ttt aaa aca ttc att gaa gat gtt Val Lys Lys Leu Asn Glu Leu Ser Phe Lys Thr Phe Ile Glu Asp Val 2405 2410 2415				7248
aac aaa ttc ctt gac atg ttg ata aag aaa tta aag tca ttt gat tac Asn Lys Phe Leu Asp Met Leu Ile Lys Lys Leu Lys Ser Phe Asp Tyr 2420 2425 2430				7296
cac cag ttt gta gat gaa acc aat gac aaa atc cgt gag gtg act cag His Gln Phe Val Asp Glu Thr Asn Asp Lys Ile Arg Glu Val Thr Gln 2435 2440 2445				7344
aga ctc aat ggt gaa att cag gct ctg gaa cta cca caa aaa gct gaa Arg Leu Asn Gly Glu Ile Gln Ala Leu Glu Leu Pro Gln Lys Ala Glu 2450 2455 2460				7392
gca tta aaa ctg ttt tta gag gaa acc aag gcc aca gtt gca gtg tat Ala Leu Lys Leu Phe Leu Glu Glu Thr Lys Ala Thr Val Ala Val Tyr 2465 2470 2475 2480				7440
ctg gaa agc cta cag gac acc aaa ata acc tta atc atc aat tgg tta Leu Glu Ser Leu Gln Asp Thr Lys Ile Thr Leu Ile Ile Asn Trp Leu 2485 2490 2495				7488
cag gag gct tta agt tca gca tct ttg gct cac atg aag gcc aaa ttc Gln Glu Ala Leu Ser Ser Ala Ser Leu Ala His Met Lys Ala Lys Phe 2500 2505 2510				7536
cga gag act cta gaa gat aca cga gac cga atg tat caa atg gac att Arg Glu Thr Leu Glu Asp Thr Arg Asp Arg Met Tyr Gln Met Asp Ile 2515 2520 2525				7584
cag cag gaa ctt caa cga tac ctg tct ctg gta ggc cag gtt tat agc Gln Gln Glu Leu Gln Arg Tyr Leu Ser Leu Val Gly Gln Val Tyr Ser 2530 2535 2540				7632
aca ctt gtc acc tac att tct gat tgg tgg act ctt gct gct aag aac Thr Leu Val Thr Tyr Ile Ser Asp Trp Trp Thr Leu Ala Ala Lys Asn 2545 2550 2555 2560				7680
ctt act gac ttt gca gag caa tat tct atc caa gat tgg gct aaa cgt Leu Thr Asp Phe Ala Glu Gln Tyr Ser Ile Gln Asp Trp Ala Lys Arg 2565 2570 2575				7728

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atg	aaa	gca	ttg	gta	gag	caa	ggg	ttc	act	gtt	cct	gaa	atc	aag	acc	7776
Met	Lys	Ala	Leu	Val	Glu	Gln	Gly	Phe	Thr	Val	Pro	Glu	Ile	Lys	Thr	
			2580					2585					2590			
atc	ctt	ggg	acc	atg	cct	gcc	ttt	gaa	gtc	agt	ctt	cag	gct	ctt	cag	7824
Ile	Leu	Gly	Thr	Met	Pro	Ala	Phe	Glu	Val	Ser	Leu	Gln	Ala	Leu	Gln	
		2595					2600					2605				
aaa	gct	acc	ttc	cag	aca	cct	gat	ttt	ata	gtc	ccc	cta	aca	gat	ttg	7872
Lys	Ala	Thr	Phe	Gln	Thr	Pro	Asp	Phe	Ile	Val	Pro	Leu	Thr	Asp	Leu	
	2610					2615					2620					
agg	att	cca	tca	gtt	cag	ata	aac	ttc	aaa	gac	tta	aaa	aat	ata	aaa	7920
Arg	Ile	Pro	Ser	Val	Gln	Ile	Asn	Phe	Lys	Asp	Leu	Lys	Asn	Ile	Lys	
2625					2630					2635					2640	
atc	cca	tcc	agg	ttt	tcc	aca	cca	gaa	ttt	acc	atc	ctt	aac	acc	ttc	7968
Ile	Pro	Ser	Arg	Phe	Ser	Thr	Pro	Glu	Phe	Thr	Ile	Leu	Asn	Thr	Phe	
				2645					2650					2655		
cac	att	cct	tcc	ttt	aca	att	gac	ttt	gta	gaa	atg	aaa	gta	aag	atc	8016
His	Ile	Pro	Ser	Phe	Thr	Ile	Asp	Phe	Val	Glu	Met	Lys	Val	Lys	Ile	
			2660					2665					2670			
atc	aga	acc	att	gac	cag	atg	ctg	aac	agt	gag	ctg	cag	tgg	ccc	gtt	8064
Ile	Arg	Thr	Ile	Asp	Gln	Met	Leu	Asn	Ser	Glu	Leu	Gln	Trp	Pro	Val	
		2675					2680					2685				
cca	gat	ata	tat	ctc	agg	gat	ctg	aag	gtg	gag	gac	att	cct	cta	gcg	8112
Pro	Asp	Ile	Tyr	Leu	Arg	Asp	Leu	Lys	Val	Glu	Asp	Ile	Pro	Leu	Ala	
	2690					2695					2700					
aga	atc	acc	ctg	cca	gac	ttc	cgt	tta	cca	gaa	atc	gca	att	cca	gaa	8160
Arg	Ile	Thr	Leu	Pro	Asp	Phe	Arg	Leu	Pro	Glu	Ile	Ala	Ile	Pro	Glu	
2705					2710					2715					2720	
ttc	ata	atc	cca	act	ctc	aac	ctt	aat	gat	ttt	caa	gtt	cct	gac	ctt	8208
Phe	Ile	Ile	Pro	Thr	Leu	Asn	Leu	Asn	Asp	Phe	Gln	Val	Pro	Asp	Leu	
				2725					2730					2735		
cac	ata	cca	gaa	ttc	cag	ctt	ccc	cac	atc	tca	cac	aca	att	gaa	gta	8256
His	Ile	Pro	Glu	Phe	Gln	Leu	Pro	His	Ile	Ser	His	Thr	Ile	Glu	Val	
			2740					2745					2750			
cct	act	ttt	ggc	aag	cta	tac	agt	att	ctg	aaa	atc	caa	tct	cct	ctt	8304
Pro	Thr	Phe	Gly	Lys	Leu	Tyr	Ser	Ile	Leu	Lys	Ile	Gln	Ser	Pro	Leu	
		2755					2760					2765				
ttc	aca	tta	gat	gca	aat	gct	gac	ata	ggg	aat	gga	acc	acc	tca	gca	8352
Phe	Thr	Leu	Asp	Ala	Asn	Ala	Asp	Ile	Gly	Asn	Gly	Thr	Thr	Ser	Ala	
	2770				2775						2780					
aac	gaa	gca	ggg	atc	gca	gct	tcc	atc	act	gcc	aaa	gga	gag	tcc	aaa	8400
Asn	Glu	Ala	Gly	Ile	Ala	Ala	Ser	Ile	Thr	Ala	Lys	Gly	Glu	Ser	Lys	
2785					2790					2795					2800	
tta	gaa	gtt	ctc	aat	ttt	gat	ttt	caa	gca	aat	gca	caa	ctc	tca	aac	8448
Leu	Glu	Val	Leu	Asn	Phe	Asp	Phe	Gln	Ala	Asn	Ala	Gln	Leu	Ser	Asn	
				2805				2810					2815			
cct	aag	att	aat	ccg	ctg	gct	ctg	aag	gag	tca	gtg	aag	ttc	tcc	agc	8496
Pro	Lys	Ile	Asn	Pro	Leu	Ala	Leu	Lys	Glu	Ser	Val	Lys	Phe	Ser	Ser	
			2820					2825					2830			
aag	tac	ctg	aga	acg	gag	cat	ggg	agt	gaa	atg	ctg	ttt	ttt	gga	aat	8544
Lys	Tyr	Leu	Arg	Thr	Glu	His	Gly	Ser	Glu	Met	Leu	Phe	Phe	Gly	Asn	

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2835	2840	2845	
gct att gag gga aaa tca aac aca gtg gca agt tta cac aca gaa aaa Ala Ile Glu Gly Lys Ser Asn Thr Val Ala Ser Leu His Thr Glu Lys 2850 2855 2860			8592
aat aca ctg gag ctt agt aat gga gtg att gtc aag ata aac aat cag Asn Thr Leu Glu Leu Ser Asn Gly Val Ile Val Lys Ile Asn Asn Gln 2865 2870 2875 2880			8640
ctt acc ctg gat agc aac act aaa tac ttc cac aaa ttg aac atc ccc Leu Thr Leu Asp Ser Asn Thr Lys Tyr Phe His Lys Leu Asn Ile Pro 2885 2890 2895			8688
aaa ctg gac ttc tct agt cag gct gac ctg cgc aac gag atc aag aca Lys Leu Asp Phe Ser Ser Gln Ala Asp Leu Arg Asn Glu Ile Lys Thr 2900 2905 2910			8736
ctg ttg aaa gct ggc cac ata gca tgg act tct tct gga aaa ggg tca Leu Leu Lys Ala Gly His Ile Ala Trp Thr Ser Ser Gly Lys Gly Ser 2915 2920 2925			8784
tgg aaa tgg gcc tcg ccc aga ttc tca gat gag gga aca cat gaa tca Trp Lys Trp Ala Ser Pro Arg Phe Ser Asp Glu Gly Thr His Glu Ser 2930 2935 2940			8832
caa att agt ttc acc ata gaa gga ccc ctc act tcc ttt gga ctg tcc Gln Ile Ser Phe Thr Ile Glu Gly Pro Leu Thr Ser Phe Gly Leu Ser 2945 2950 2955 2960			8880
aat aag atc aat agc aaa cac cta aga gta aac caa aac ttg gtt tat Asn Lys Ile Asn Ser Lys His Leu Arg Val Asn Gln Asn Leu Val Tyr 2965 2970 2975			8928
gaa tct ggc tcc ctc aac ttt tct aaa ctt gaa att caa tca caa gtc Glu Ser Gly Ser Leu Asn Phe Ser Lys Leu Glu Ile Gln Ser Gln Val 2980 2985 2990			8976
gat tcc cag cat gtg ggc cac agt gtt cta act gct aaa ggc atg gca Asp Ser Gln His Val Gly His Ser Val Leu Thr Ala Lys Gly Met Ala 2995 3000 3005			9024
ctg ttt gga gaa ggg aag gca gag ttt act ggg agg cat gat gct cat Leu Phe Gly Glu Gly Lys Ala Glu Phe Thr Gly Arg His Asp Ala His 3010 3015 3020			9072
tta aat gga aag gtt att gga act ttg aaa aat tct ctt ttc ttt tca Leu Asn Gly Lys Val Ile Gly Thr Leu Lys Asn Ser Leu Phe Phe Ser 3025 3030 3035 3040			9120
gcc cag cca ttt gag atc acg gca tcc aca aac aat gaa ggg aat ttg Ala Gln Pro Phe Glu Ile Thr Ala Ser Thr Asn Asn Glu Gly Asn Leu 3045 3050 3055			9168
aaa gtt cgt ttt cca tta agg tta aca ggg aag ata gac ttc ctg aat Lys Val Arg Phe Pro Leu Arg Leu Thr Gly Lys Ile Asp Phe Leu Asn 3060 3065 3070			9216
aac tat gca ctg ttt ctg agt ccc agt gcc cag caa gca agt tgg caa Asn Tyr Ala Leu Phe Leu Ser Pro Ser Ala Gln Gln Ala Ser Trp Gln 3075 3080 3085			9264
gta agt gct agg ttc aat cag tat aag tac aac caa aat ttc tct gct Val Ser Ala Arg Phe Asn Gln Tyr Lys Tyr Asn Gln Asn Phe Ser Ala 3090 3095 3100			9312

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gga aac aac gag aac att atg gag gcc cat gta gga ata aat gga gaa Gly Asn Asn Glu Asn Ile Met Glu Ala His Val Gly Ile Asn Gly Glu 3105 3110 3115 3120	9360
gca aat ctg gat ttc tta aac att cct tta aca att cct gaa atg cgt Ala Asn Leu Asp Phe Leu Asn Ile Pro Leu Thr Ile Pro Glu Met Arg 3125 3130 3135	9408
cta cct tac aca ata atc aca act cct cca ctg aaa gat ttc tct cta Leu Pro Tyr Thr Ile Ile Thr Thr Pro Pro Leu Lys Asp Phe Ser Leu 3140 3145 3150	9456
tgg gaa aaa aca ggc ttg aag gaa ttc ttg aaa acg aca aag caa tca Trp Glu Lys Thr Gly Leu Lys Glu Phe Leu Lys Thr Thr Lys Gln Ser 3155 3160 3165	9504
ttt gat tta agt gta aaa gct cag tat aag aaa aac aaa cac agg cat Phe Asp Leu Ser Val Lys Ala Gln Tyr Lys Lys Asn Lys His Arg His 3170 3175 3180	9552
tcc atc aca aat cct ttg gct gtg ctt tgt gag ttt atc agt cag agc Ser Ile Thr Asn Pro Leu Ala Val Leu Cys Glu Phe Ile Ser Gln Ser 3185 3190 3195 3200	9600
atc aaa tcc ttt gac agg cat ttt gaa aaa aac aga aac aat gca tta Ile Lys Ser Phe Asp Arg His Phe Glu Lys Asn Arg Asn Asn Ala Leu 3205 3210 3215	9648
gat ttt gtc acc aaa tcc tat aat gaa aca aaa att aag ttt gat aag Asp Phe Val Thr Lys Ser Tyr Asn Glu Thr Lys Ile Lys Phe Asp Lys 3220 3225 3230	9696
tac aaa gct gaa aaa tct cac gac gag ctc ccc agg acc ttt caa att Tyr Lys Ala Glu Lys Ser His Asp Glu Leu Pro Arg Thr Phe Gln Ile 3235 3240 3245	9744
cct gga tac act gtt cca gtt gtc aat gtt gaa gtg tct cca ttc acc Pro Gly Tyr Thr Val Pro Val Val Asn Val Glu Val Ser Pro Phe Thr 3250 3255 3260	9792
ata gag atg tcg gca ttc ggc tat gtg ttc cca aaa gca gtc agc atg Ile Glu Met Ser Ala Phe Gly Tyr Val Phe Pro Lys Ala Val Ser Met 3265 3270 3275 3280	9840
cct agt ttc tcc atc ata ggt tct gac gtc cgt gtg cct tca tac aca Pro Ser Phe Ser Ile Ile Gly Ser Asp Val Arg Val Pro Ser Tyr Thr 3285 3290 3295	9888
tta atc ctg cca tca tta gag ctg cca gtc ctt cat gtc cct aga aat Leu Ile Leu Pro Ser Leu Glu Leu Pro Val Leu His Val Pro Arg Asn 3300 3305 3310	9936
ctc aag ctt tct ctt cca gat ttc aag gaa ttg tgt acc ata agc cat Leu Lys Leu Ser Leu Pro Asp Phe Lys Glu Leu Cys Thr Ile Ser His 3315 3320 3325	9984
att ttt att cct gcc atg ggc aat att acc tat gat ttc tcc ttt aaa Ile Phe Ile Pro Ala Met Gly Asn Ile Thr Tyr Asp Phe Ser Phe Lys 3330 3335 3340	10032
tca agt gtc atc aca ctg aat acc aat gct gaa ctt ttt aac cag tca Ser Ser Val Ile Thr Leu Asn Thr Asn Ala Glu Leu Phe Asn Gln Ser 3345 3350 3355 3360	10080

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gat att gtt gct cat ctc ctt tct tca tct tca tct gtc att gat gca	10128
Asp Ile Val Ala His Leu Leu Ser Ser Ser Ser Ser Val Ile Asp Ala	
3365 3370 3375	
ctg cag tac aaa tta gag ggc acc aca aga ttg aca aga aaa agg gga	10176
Leu Gln Tyr Lys Leu Glu Gly Thr Thr Arg Leu Thr Arg Lys Arg Gly	
3380 3385 3390	
ttg aag tta gcc aca gct ctg tct ctg agc aac aaa ttt gtg gag ggt	10224
Leu Lys Leu Ala Thr Ala Leu Ser Leu Ser Asn Lys Phe Val Glu Gly	
3395 3400 3405	
agt cat aac agt act gtg agc tta acc acg aaa aat atg gaa gtg tca	10272
Ser His Asn Ser Thr Val Ser Leu Thr Thr Lys Asn Met Glu Val Ser	
3410 3415 3420	
gtg gca aaa acc aca aaa ccg gaa att cca att ttg aga atg aat ttc	10320
Val Ala Lys Thr Thr Lys Pro Glu Ile Pro Ile Leu Arg Met Asn Phe	
3425 3430 3435 3440	
aag caa gaa ctt aat gga aat acc aag tca aaa cct act gtc tct tcc	10368
Lys Gln Glu Leu Asn Gly Asn Thr Lys Ser Lys Pro Thr Val Ser Ser	
3445 3450 3455	
tcc atg gaa ttt aag tat gat ttc aat tct tca atg ctg tac tct acc	10416
Ser Met Glu Phe Lys Tyr Asp Phe Asn Ser Ser Met Leu Tyr Ser Thr	
3460 3465 3470	
gct aaa gga gca gtt gac cac aag ctt agc ttg gaa agc ctc acc tct	10464
Ala Lys Gly Ala Val Asp His Lys Leu Ser Leu Glu Ser Leu Thr Ser	
3475 3480 3485	
tac ttt tcc att gag tca tct acc aaa gga gat gtc aag ggt tcg gtt	10512
Tyr Phe Ser Ile Glu Ser Ser Thr Lys Gly Asp Val Lys Gly Ser Val	
3490 3495 3500	
ctt tct cgg gaa tat tca gga act att gct agt gag gcc aac act tac	10560
Leu Ser Arg Glu Tyr Ser Gly Thr Ile Ala Ser Glu Ala Asn Thr Tyr	
3505 3510 3515 3520	
ttg aat tcc aag agc aca cgg tct tca gtg aag ctg cag ggc act tcc	10608
Leu Asn Ser Lys Ser Thr Arg Ser Ser Val Lys Leu Gln Gly Thr Ser	
3525 3530 3535	
aaa att gat gat atc tgg aac ctt gaa gta aaa gaa aat ttt gct gga	10656
Lys Ile Asp Asp Ile Trp Asn Leu Glu Val Lys Glu Asn Phe Ala Gly	
3540 3545 3550	
gaa gcc aca ctc caa cgc ata tat tcc ctc tgg gag cac agt acg aaa	10704
Glu Ala Thr Leu Gln Arg Ile Tyr Ser Leu Trp Glu His Ser Thr Lys	
3555 3560 3565	
aac cac tta cag cta gag ggc ctc ttt ttc acc aac gga gaa cat aca	10752
Asn His Leu Gln Leu Glu Gly Leu Phe Phe Thr Asn Gly Glu His Thr	
3570 3575 3580	
agc aaa gcc acc ctg gaa ctc tct cca tgg caa atg tca gct ctt gtt	10800
Ser Lys Ala Thr Leu Glu Leu Ser Pro Trp Gln Met Ser Ala Leu Val	
3585 3590 3595 3600	
cag gtc cat gca agt cag ccc agt tcc ttc cat gat ttc cct gac ctt	10848
Gln Val His Ala Ser Gln Pro Ser Ser Phe His Asp Phe Pro Asp Leu	
3605 3610 3615	
ggc cag gaa gtg gcc ctg aat gct aac act aag aac cag aag atc aga	10896
Gly Gln Glu Val Ala Leu Asn Ala Asn Thr Lys Asn Gln Lys Ile Arg	
3620 3625 3630	

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tgg aaa aat gaa gtc cgg att cat tct ggg tct ttc cag agc cag gtc Trp Lys Asn Glu Val Arg Ile His Ser Gly Ser Phe Gln Ser Gln Val 3635 3640 3645	10944
gag ctt tcc aat gac caa gaa aag gca cac ctt gac att gca gga tcc Glu Leu Ser Asn Asp Gln Glu Lys Ala His Leu Asp Ile Ala Gly Ser 3650 3655 3660	10992
tta gaa gga cac cta agg ttc ctc aaa aat atc atc cta cca gtc tat Leu Glu Gly His Leu Arg Phe Leu Lys Asn Ile Ile Leu Pro Val Tyr 3665 3670 3675 3680	11040
gac aag agc tta tgg gat ttc cta aag ctg gat gtc acc acc agc att Asp Lys Ser Leu Trp Asp Phe Leu Lys Leu Asp Val Thr Thr Ser Ile 3685 3690 3695	11088
ggt agg aga cag cat ctt cgt gtt tca act gcc ttt gtg tac acc aaa Gly Arg Arg Gln His Leu Arg Val Ser Thr Ala Phe Val Tyr Thr Lys 3700 3705 3710	11136
aac ccc aat ggc tat tca ttc tcc atc cct gta aaa gtt ttg gct gat Asn Pro Asn Gly Tyr Ser Phe Ser Ile Pro Val Lys Val Leu Ala Asp 3715 3720 3725	11184
aaa ttc att att cct ggg ctg aaa cta aat gat cta aat tca gtt ctt Lys Phe Ile Ile Pro Gly Leu Lys Leu Asn Asp Leu Asn Ser Val Leu 3730 3735 3740	11232
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gatatacaa ctgcattgga taatgccaaa atcaacttaa atgaaaaact gtctcaactt 180

cagacatatg tgatataatt tgatcagtat attaaagata attttgatct acatgatttt 240

aaaatagcta tagctagtat tatagatcaa atcatggaaa aattaaaaat tcttgatgaa 300

cgttatcata tccgtgcaca ttttaattaaa tcaatccata atttatattt gtttattgaa 360

gctattgatt ttaacaaaat tggaagtagt actgcatctt ggattcaaaa tgtggatacc 420

aagtatcaag tcagaatctg gatacaagaa atattgcaac agtttaagac acagattcag 480

aatacaaaaca tcccatacct ggctgaaaaa ctgaaacaac agattgaggc tattgatgtc 540

agagtgcttt tagatcaatt gagaactaca attccatttc gtataataaa ggacattatt 600

gaacatttca aatactttgt tataaatatt attgaaaatt ttgaagtaat tgacaaaatc 660

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<213> O. cuniculus

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<220>
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<220>
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